

Periodical

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AMERICAN BEE JOURNAL

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June 1941



ORDER OF THE HONEYBEE

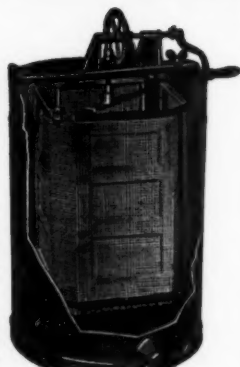


EXTRACTS COMBS FAST...EFFICIENT DOUBLE DUTY DRIES CAPPINGS IN A FEW MINUTES

- Strong reinforced construction.
- Balanced reel turns on ball bearings.
- Adjustable honey flow gate.
- Full comb support.

Entire top gearing lifts off to easily pour in cappings. Whirling a few minutes dries them. Reel basket quickly lifted out to dump dried cappings and clean.

No. 14 (illustrated) handles 4 Standard or 8 Half-Depth frames. No. 12 handles 3 Jumbo or 6 Shallow frames. No. 18 handles 4 Jumbo or 8 Shallow frames. No. 6 handles 2 standard or 4 half-depth frames.



PATENTED

DOES THE JOB QUICKLY AND DOES IT RIGHT

Size	Pockets	Weight	Hand Drive	Power Drive
No. 6-2-Frame	9 1/4"x16"	35 lbs.	\$11.95	\$16.45
No. 12-3-Frame	12"x16"	50 lbs.	15.25	19.65
No. 14-4-Frame	9 1/4"x16"	50 lbs.	14.25	18.60
No. 18-4-Frame	12"x16"	90 lbs.	21.00	24.50



Reversible EXTRACTORS

This two-frame reversible extractor is known as the "old reliable" and is recognized by beekeepers as one of the best made. Entire pockets are simply swung to opposite side to reverse combs. The pockets have panels pressed into the heavy galvanized wire mesh to give full comb support. No. 15 weighs 90 lbs. has 9 1/4"x16" pockets. No. 17 weighs 110 lbs. has 12"x16" pockets.

Size	Hand Drive	Power Drive
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No. 17-2 frame	25.00	28.40

STANDARD PRODUCTS

A sign of good equipment at reasonable prices.

24-Frame Radials	\$80.00
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Bee Smokers (with leather bellows) 4 x 7	1.10
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Plain Uncapping Knives 10 1/2" size	1.30
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Hive Tools (with nail hole) 10" size	.55
Spur Wire Imbedders	.20

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WAPAKONETA, OHIO

Makers of good products for more than 60 years.

GENUINE Lady Like, Mountain Grey Caucasian Bees & Queens

For June Delivery

Select untested queens 50c ea.

2-lb. pkg. with select untested queen \$2.45 ea.

3-lb. pkg. with select untested queen 3.15 ea.

We will ship no bees or queens after June 28th this season, but will be getting ready for a bigger business with the best in quality for the 1942 season.

Caucasian Apiaries

Home of Mountain Grey Bees

Brooklyn, Alabama

Lotz Quality SECTIONS

The Best Money Can Buy

WHY?

..... Because through 43 years of successful experience they have been perfected in every possible way.

..... Because they are made of the finest quality material available.

..... Because, regardless of their quality they are reasonably priced.

SEND US YOUR ORDER NOW

A complete line of other bee supplies will be found in our 1941 catalog. Write for your free copy.

AUGUST LOTZ COMPANY
BOYD, WISCONSIN

CO-ORDINATION

Without this essential fact no business can be efficient. Approximately sixty persons are employed by The Stover Apiaries during the rush season. Each has a particular job to be done, such as office work, rearing queens, shaking packages, etc. This must be all co-ordinated, so there is an uninterrupted flow of bees and queens to you. We are on the job sometimes 10 hours, sometimes 15—whatever it takes to give you service.

May we serve you better?



ITALIANS or CAUCASIANS

PRICES

	Queens	2-lb. Pkgs. with Queen	3-lb. Pkgs. with Queen	4-lb. Pkgs. with Queen	5-lb. Pkgs. with Queen
1 to 24	\$.50	\$1.90	\$2.50	\$3.10	\$3.70
25 to 99 .....	.45	1.75	2.30	2.85	3.40
100 to 499 .....	.40	1.60	2.10	2.60	3.10

Payable in U. S. funds.

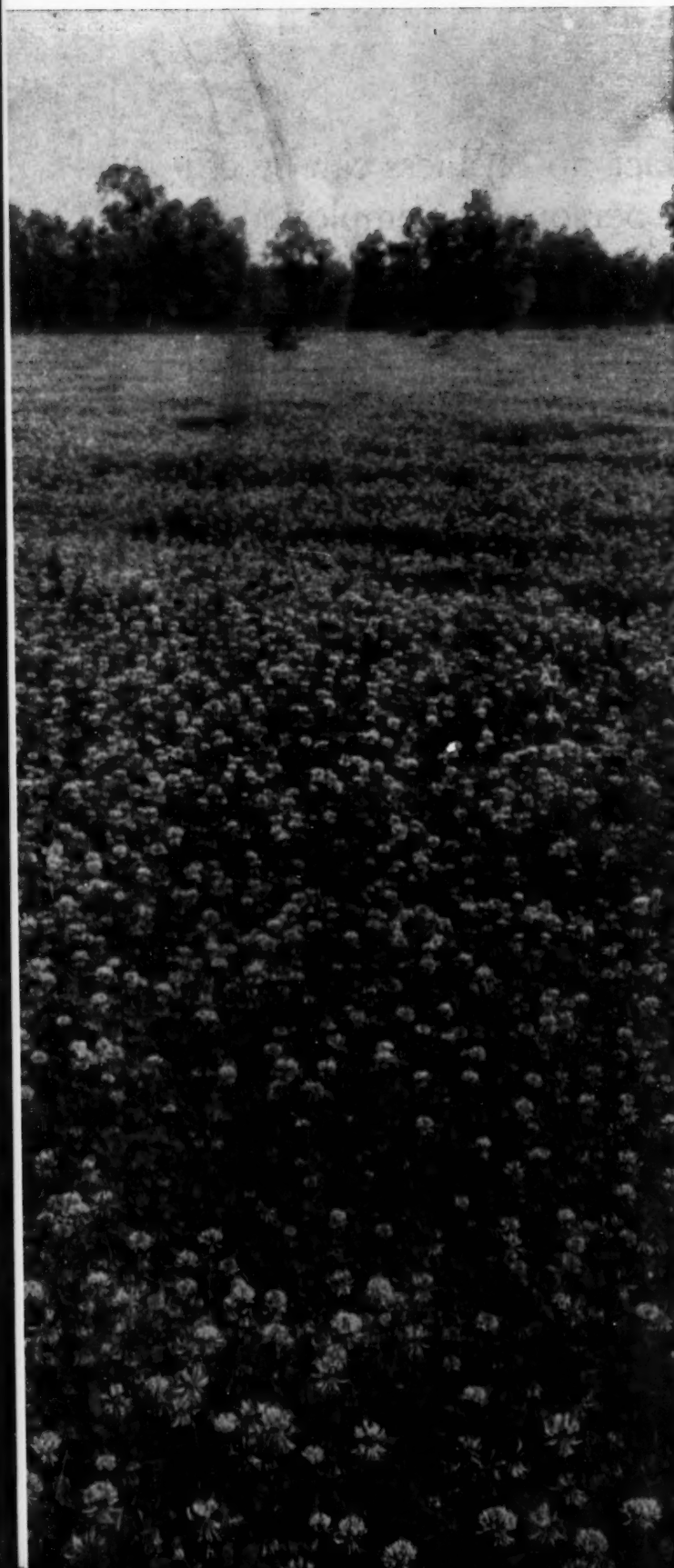
Tested Queens twice the price of untested.

Queens clipped at no extra cost.



THE STOVER APIARIES
MAYHEW, MISSISSIPPI

AMERICAN BEE JOURNAL



EDITORS: G. H. CALE, FRANK C. PELLETT,
M. G. DADANT, J. C. DADANT.

June, 1941 Volume LXXXI No. 6

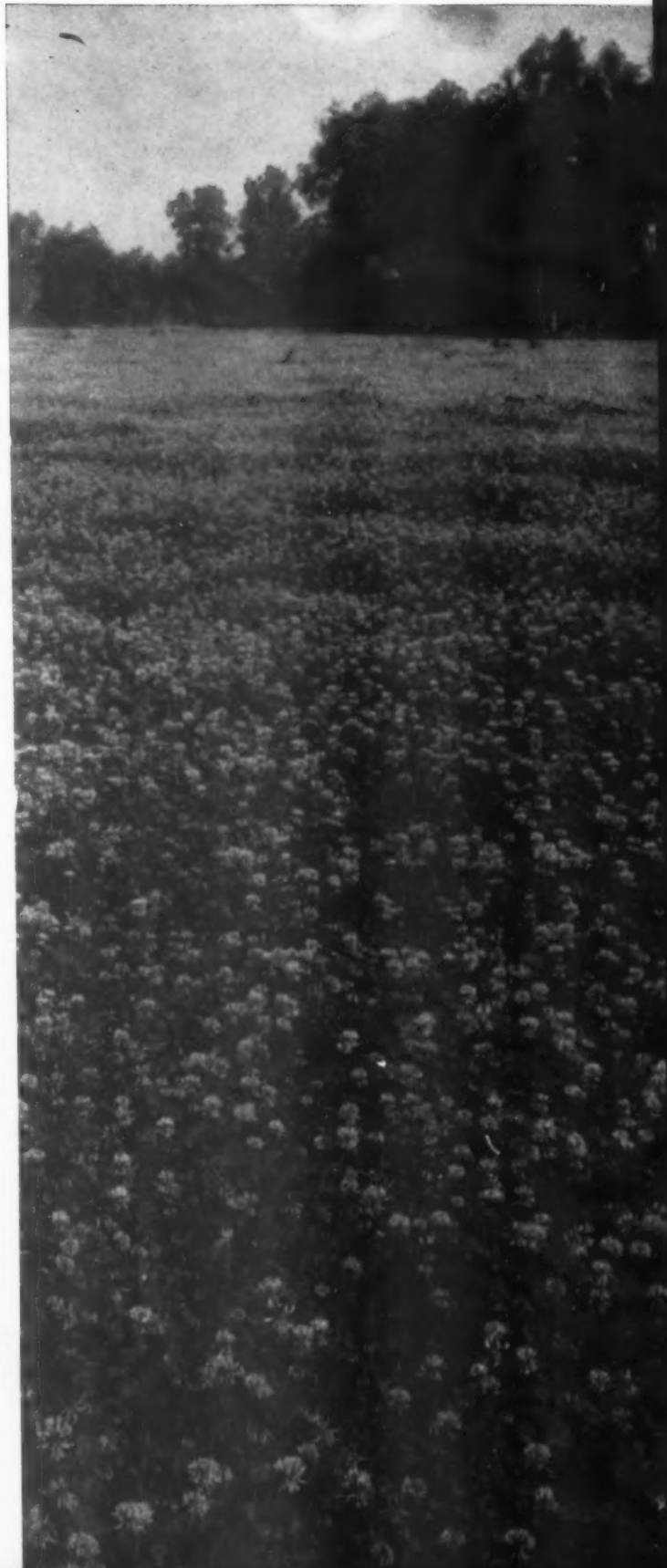
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Copyright 1941. Published monthly at Hamilton, Illinois.
Entered as second class matter at the Postoffice, at Hamilton,
Illinois. In United States, Canada, and Mexico, \$1.00 a year;
two years \$1.50; three years \$2.00; Foreign \$1.25 a year; two
years \$2.00; three years \$2.75. Subscription stopped at expi-
ration printed on wrapper.

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EDITORIAL

THE MASTER BEEKEEPER

THE first number of this magazine which appeared in January, 1861, contained the following:

"He may be regarded as a master in bee culture, who knows how to winter his stocks in a healthy condition, with the least loss of bees, the smallest consumption of stores, and with the combs unsoiled."

Even today this is a pretty good test of the ability of a beeman in the northern states where wintering is the most serious problem which the beekeeper has to face.

DIRECT SALES OF HONEY

TOO many beekeepers try to sell their honey direct to the consumer at wholesale prices and demoralize the market. Occasionally there is one who uses up-to-date sales methods and finds an outlet for the honey at prices above the current market. Many of our readers will remember the late Rachel Beatrice Pettit who was a prominent and successful Canadian honey producer at the time when her brother was in charge of the beekeeping work at the Agricultural College at Guelph, Ontario.

When it came to disposing of her crop Miss Pettit was unwilling to sell at a low price the product which she had worked so hard to produce. Instead of selling to the wholesaler she tried numerous experiments in direct selling either to the retailer or the consumer. Eventually in co-operation with her brother a mail order trade was developed which took as high as 94,000 pounds in a year.

Miss Pettit took great care in grading her product and in separating light from dark honey when extracting. She used attractive containers and only clean new crates for shipping. Every effort was made to give the impression of quality.

Instead of sending impersonal circulars to her mailing list she kept in touch with her customers by means of personal letters. As a result of her

effort she increased her income substantially above what she might have received through selling direct to the wholesaler. The beekeeper who makes use of his spare time to sell direct at favorable prices helps not only himself but also the industry generally through his assistance in sustaining better market prices.

GARDENS AND BEES

IN a recent article regarding the war in England it was stated that interest in gardening is increasing not only as a means of food production but as release for emotional stress. It is said that "we need spiritual fortitude as well as air bases and armies."

Even in this country so far from the scene of conflict most people feel the strain. The radio news broadcasts and the newspapers are largely devoted to war and one hears but little except bombing and shelling of cities and sinking of ships.

We may expect American people also to seek escape through such activities as gardening and beekeeping. Association with the bees is particularly soothing to jangled nerves for many people.

The human race can profit greatly by closer contact with things of the soil. Beekeeping, floriculture or bee culture can help the tired office worker to forget his anxieties.

RIISING PRICES

HONEY prices are looking up. They still continue at a discouragingly low point but the tendency is upward. Reports indicate that most of the large lots have moved into the market and that

but little honey will be carried over to compete with the new crop.

White honey is moving at about one-half cent per pound more in car lots than it brought at the low point last fall.

There has been much argument as to who or what is responsible for the prevailing low prices of recent months but apparently it is due in part to the heavy production of sugar. So long as the beekeeper offers his product in competition with sugar the price must, of necessity, remain low.

The World War is stimulating business in many lines and temporarily we may expect prices of all commodities to advance. Due to the heavy surplus of sugar, prices of sweets may lag behind other products but indications are that demand and prices are likely to improve during coming months.

With half the world in a life and death battle the reserves of foodstuffs will soon be depleted. When the struggle ends it may easily happen that the surplus in this country may save millions from famine and starvation. Fortunately honey is not perishable and we have every encouragement to produce to the limit of our capacity, knowing that it must soon be needed.

TREND OF THE TIMES

A publication must of necessity reflect the sentiments of the majority of its readers. As soon as it ceases to do so its circulation rapidly declines and it disappears from the scene. By comparing the trend of discussion of present day publications with former issues of the same magazines it is easy to see what changes have come in public sentiment.

Of late there has been some comment on the fact that bee magazines have ceased to give much space to a discussion of bee behavior and devote their attention to mass production and marketing. One has only to read the farm papers, the fruit magazines, the publications devoted to poultry or vegetable growing to see that there is a similar trend throughout the entire food producing field. It can hardly be regarded as a healthy sign when the followers of any industry lose interest in the fundamentals and become interested only in the size and price of the output.

This trend is very probably the direct result of the stress of financial pressure which has prevailed in recent years. Most people have found in-

creasing difficulty in maintaining the situation to which they were accustomed and have given attention to income. With better prices and more favorable financial trends we assume that the average beekeeper, gardener or farmer would again show his former interest in the fundamentals of his calling.

WANTED—A NEW IDEA

SOME years ago the raisin growers found themselves with a large surplus of fruit. In order to find outlets they sought the services of specialists who suggested a revolutionary idea. Raisins in bread offered an outlet for the surplus raisins but first the public must be educated to ask for the product. Growers' organizations started extension work on their own account and sent trained men into many localities to demonstrate to bakers how to use raisins in bread and to arouse the public interest in the new product.

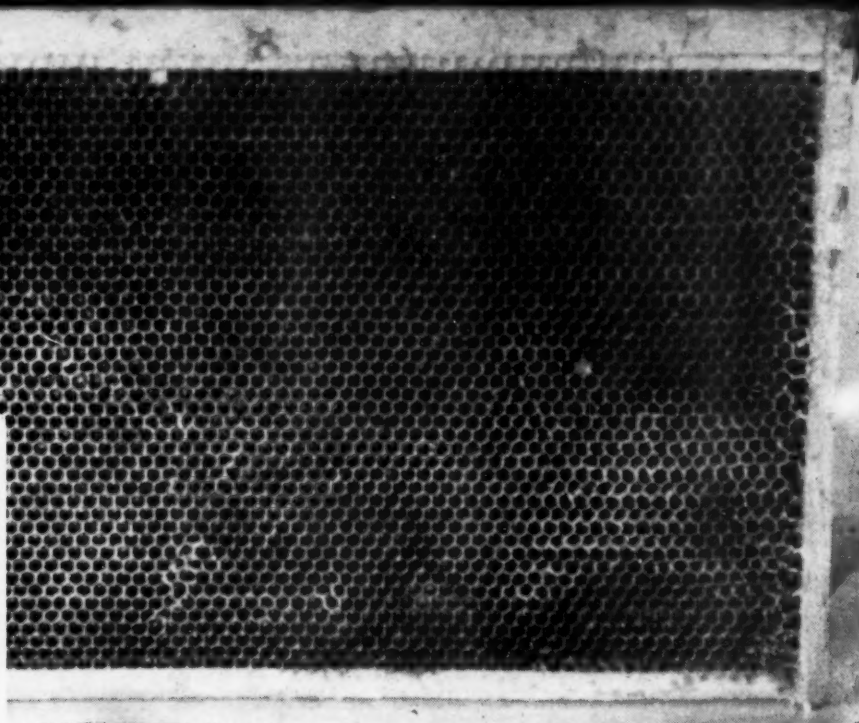
The result was amazing. Figures published in 1923 indicated that the one new outlet had consumed 30,000 tons of raisins yearly and 30,000 tons is a lot of raisins.

What the beekeeping industry needs just now is someone with equal imagination to come forward with a new idea for the use of honey. In view of the high quality of our product and the limited amount available it should not be difficult to find markets to take it all at prices which return a fair profit to the producer.

THE BEST BEE

IN a comment on bee breeding the January Bee World quotes: "The best bee is best only in the district for and in which she is bred." How little we appreciate that fact here in the United States with its vast distances and great variation in climate. Our breeders sell to customers in all parts of the United States and Canada and it is no wonder that some complaints arise. The wonder is that satisfaction is so general.

It would seem that special effort might well be put forward to breed strains of bees adapted to special areas where conditions are similar.



1924 to 1941 And Good Today

"I send you combs drawn from Dadant's Crimp-wired Foundation in 1924 and 1925 that are as good today as the day they were drawn out by the bees. In my opinion Dadant's Crimp-wired Foundation is the cheapest foundation to use. When I cull combs, I find very few built on Dadant's Crimp-wired foundation that ever have to be discarded because of defects of any sort, and whatever damage I find is usually caused by accident and not a fault of the foundation. The crimped steel wires hold the comb firmly while it is drawn out and

forever afterwards. I save money when I use it. If I were to start again, tomorrow, I would use Dadant's Crimp-wired Foundation exclusively. I have many thousand combs in constant use."

GORDON BELL, Minnesota.

For Everlasting Combs Use Dadant's Crimp-wired Foundation

The cheapest way to get good combs that will last a lifetime, is to have them drawn from Dadant's Crimp-wired Foundation above the brood nest in a good honeyflow. The slightly higher cost per comb will be paid for many times each year in extra production. Combs that sag, stretch and buckle are expensive no matter how little you pay for the foundation. They go into the melting pot quickly. This means a double loss, loss in replacing the foundation, and loss of time and honey for the bees.

Save from the start. Use Dadant's Crimp-wired Foundation.

DADANT & SONS,

HAMILTON, ILLINOIS

Makers of Famous Foundations Crimped-wired — Plain — Surplus



Guest Editorial
June Award Winner

MY BEEKEEPING HOBBY

By ANN BEEMAN

SINCE beekeeping started to run in my family, I have found that there are a number of very interesting hobbies that are directly connected with it. Knowing something about these other things seems to be necessary as well as interesting. I only wish that I had been a little more interested a few years ago because I can look back and see where a little knowledge or an interest in these same subjects might have meant much to me.

We used to live in Florida, and lately I have learned that the locality where we lived must have been a paradise for beekeepers, only there were no beekeepers there. There was an abundance of gallberry, palmetto and other plants. We had an orange tree that many years produced as many as two thousand oranges. But nobody in the family was interested in bees at that time.

I have lived in the country almost all of my life, and since we have started keeping bees on the place, I have found another interesting hobby, and that is botany. Of course, I have studied botany before, but now I am finding a new interest in it. Now I am studying it in its relationship to beekeeping, and the more I study it, the more the subject opens up before me. Last year I started to keep a record of the nectar and pollen bearing plants as they bloomed, but I started late. This year I started with the very first plant, but the bees are getting ahead of me. They are finding plants that I can't find. They were bringing in

nectar last week, but I couldn't locate the source. And they brought in the first green pollen this year that I had ever seen. The holly trees furnish the first crop of honey here. It is only in the last few years that I found out that there is both male and female holly trees. The female tree has berries on it. There are other plants that produce nectar but I am afraid that my list will be very incomplete again this year.


They say that a sufficiently interesting hobby will keep you young, but friends seem to think that I am more likely to be killed by mine. Along with my other interests, I am learning to climb trees again. I used to climb in my early childhood, but stopped in my teens. Most of my neighbors were shocked three years ago when I learned to ride a bicycle; they said that I was too old for that sort of thing. Now I shudder to think of what they would say if they saw me climbing a tree, especially if I was loaded down with a saw, rope, and other implements of swarm catching. But when the beekeeper is away, I have the swarms to catch. There was one unusually busy week last year when I successfully climbed trees and caught fifteen swarms. And then just a few weeks ago when I went to an evening entertainment, a thoughtful young girl carefully helped me down the steps so I wouldn't fall. I wondered then what she would think if she saw me climbing trees.

Grapevine, Arkansas.

The Editorial Contest

Ann Beeman, the appropriately named person who wins this month's editorial competition, has true amateur enthusiasm. We are pleased to present this evidence of beekeeping as a hobby. "As the mother of a very enthusiastic young beekeeper," she writes, "I find myself reading the bee journals, catching bees, and doing a lot of other things . . ." The runners-up this month submitted editorials as follows: second, "Before I was a Beekeeper," by Leslie W. Franks; third, "Creating the Desire for Honey," by A. W. Burnham; fourth, "Our Achilles Heel," by Stephen Taber, III.

Because of the extra amount of work beekeepers have on hand during June, July, and August, we have decided to suspend the Editorial Contest until the October issue, when everybody can settle down again and collect their thoughts.

Only Lewis Hives Are 

ROTPROOFED

All 10-frame Beeware bodies now ready for shipment have been rotproofed—a new Lewis improvement that controls decay of all exposed wood parts and repels termites. This exclusive Lewis advantage is apiary tested and equivalent to two coats of paint as a wood preservative. One coat of oily paint is recommended to prevent checking of wood grain but this rotproof treatment permeates the wood and makes hives last years longer.

As fast as possible in 1941 all Beeware bottoms, wood covers, metal cover rims and super shells will be supplied

rotproofed at no additional charge. New facilities make this possible.

Every dovetail in every Beeware body, super or cover is ready bored for nailing as are all slotted bottom bars in Lewis frames. No charge is made for these exclusive Lewis features either. In addition you get the new metal frame rest which cannot bend out of shape even after years of use. Some Lewis frames are lower in price than in 1940 as improvements made possible by new manufacturing facilities partly offset advances in lumber costs over last year. Ask for our 1941 Beeware catalog.

Aeroplane view of enlarged Lewis plant at Watertown.



HONESTLY MADE ————— HONESTLY SOLD ————— HONESTLY PRICED

LEWIS BEEWARE

STANDARD OF THE BEEKEEPING WORLD

G. B. LEWIS COMPANY

Established 1863

HOME OFFICE AND WORKS: WATERTOWN, WISCONSIN

BRANCHES: ALBANY, N. Y. LYNCHBURG, VA. SPRINGFIELD, OHIO SIOUX CITY, IOWA

HONEY PUBLICITY PROGRAM

IT looks like the honey industry is really going to town. Here is an informal report of some of the efforts and results for the first quarter, released by Mr. Lewis W. Parks, chairman of the American Honey Institute.

Radio—The opening gun in the industry publicity campaign was a five minute radio script syndicated in January to 283 radio stations. They were sent to the women commentators of stations both large and small in all parts of the country. Scripts on honey and the use of honey have been sent out each month since January—and it is interesting to note that the number of stations now being serviced has been built up to a total this month of 391 subscribing stations.

Syndicated feature pages—In January also began the newspaper publicity on honey. During January and February stories on honey were syndicated to 3,000 subscribing newspapers and magazines.

In March there was created a special new feature page entitled "The Woman's World," designed for the women's page editors of newspapers and in April and again in May pictures and stories about honey have been carried in this feature. "The Woman's World" is sent to 1447 daily newspapers, 916 selected weekly newspapers and 1214 home service directors of public utility companies. Response to date to this new syndicated feature has been very gratifying.

The American Honey Girl—One of the first feature promotions undertaken by the Honey Institute was the selection of Carole Landis, 20th Century-Fox Star, as the American Honey Girl. This promotion was begun in March when Mr. Lewis W. Parks informed Miss Landis by wire that she had been selected the American Honey Girl by the 800,000 members and affiliates of the Honey Institute and inviting her to attend a later meeting in Chicago at which time she would be crowned The American Honey Girl. This story was released simultaneously to the press in Hollywood, California, and Madison, Wisconsin, together with pictures of Miss Landis. It received a very good press and will be followed up by subsequent presentation to Miss Landis of a scroll confirming her selection. That date will be the occasion for other news stories about Miss Landis and the American Honey Institute. In



Carole Landis, Twentieth Century-Fox film star, toasts her title of America's Honey Girl with a breakfast of muffins and honey. Miss Landis, on the completion of her current film, will go to Chicago to receive the official scroll of American Honey Institute.

the meantime, syndicates and columnists have carried the news of the American Honey Girl rather widespread throughout the country.

As a further promotion in connection with the Honey Girl, it has been decided to create a new hairdo known as the "Honeycomb." As soon as Miss Landis finishes working on

her current picture, one of the outstanding Hollywood coiffeurs will create the hairdo and we will undoubtedly receive a lot of notice in the press on this new "Honeycomb" hairdo.

Honey for Breakfast Week—For the third consecutive year the week beginning Easter Sunday was desig-



Josephine Johnson, New York debutante and glamour girl, spreads honey on her breakfast toast at the Ambassador Hotel's Easter Sunday breakfast party. Easter Sunday began "Honey for Breakfast" week, sponsored by American Honey Institute, and to celebrate the occasion the Ambassador and other smart hostelrys served honey with regular morning meals during the week.

nated "Honey for Breakfast Week." This year the week received an extremely good press. Pictures were syndicated by the Newspaper Enterprise Association, International News Photos, and Acme Newspapers, each of which serves several hundred important dailies throughout the country. Special copy was also prepared for the 4,000 weekly newspapers of Western Newspaper Union. In addition, two stories on honey for breakfast were sent to newspapers all over the country, and the fashionable Ambassador Hotel on Park Avenue, New York, actually served honey for breakfast in its famed Trianon Room during that week. Pictures of debutante Josephine Johnson of New York, eating honey at Easter Sunday breakfast with an officer from the HMS Malaya were syndicated and some returns have already come in.

Short items to syndicates—The Associated Press, the United Press, International News Service and other press associations and syndicates have been serviced with short features on honey.

Picture syndicate features—Illustrated feature stories on honey have been placed with two of the great international syndicates. First of these, a six column feature entitled: "The Sweetest Story Ever Told" was

This little two-year-old likes her honey right out of the comb. Photographs on this page are typical of those being released by American Honey Institute in its new campaign to publicize honey.



prepared in March and clippings have begun to come in. The second, a picture layout of bees and beekeeping is being syndicated by Acme News Pictures.

It is the intention to syndicate other illustrated features on honey gathering and other phases of honey production as soon as the season is a little more advanced.

Other syndicates—Special copy has been sent to Science Service in Washington and has already resulted in one syndicated story on honey. Special material has been sent to Western Newspaper Union in Chicago.

A special feature on honey tasting has been placed with John Hix for his "Strange As It Seems" syndicated cartoon. A special oddity on honey has been submitted to Ripley for his "Believe It Or Not." Other honey oddities have been placed with other syndicated cartoonists.

Magazines—Special copy has been prepared for Miss Mona Gardner, feature writer who is doing a special piece on foods and their nutritive and medicinal values for Readers' Digest. Parents Magazine has been queried concerning a special piece on pre-natal and infant diets with special reference to honey in those diets and they are interested in the story. The editors of Parent's Magazine have asked that the material for such an article be submitted and this has been discussed with Dr. Iago Gladstone, Executive Secretary of the New York Academy of Medicine and Dr. Frederick H. Bartlett, one of the foremost pediatricians in New York City.

A well known writer is now preparing a story on honey industry for one of the so-called "slick paper" magazines and has promised to use honey material and credit the American Honey Institute.

Recipes—There have, of course, been sent out many approved honey recipes, as well as recipe literature of the American Honey Institute (including "Honey the Clock Around") to food editors and the leading metropolitan newspapers in the United States and food editors of all the great press associations and syndicates.

For the future—Some of the more important activities for the near future follow:

1. Charles B. Driscoll, syndicated columnist and successor to the "New York Column" of the late O. O. McIntyre, has agreed to do a piece on honey as soon as he can be taken to an apiary so that he can learn at first hand something about bee culture and honey production.

2. In a few more weeks it is hoped that several interesting picture layouts along the same lines will be

syndicated to newspapers and magazines.

3. American Weekly, Hearst Sunday supplement, with a circulation of approximately 8,000,000, has already requested a piece on honey and long life. The source material for this story is already at hand and we expect will soon be placed with the American Weekly.

4. Dr. Russell M. Wilder of the Mayo Clinic, Rochester, Minnesota, has been contacted for further material relative to a recent statement of his before the American College of Physicians in Boston, concerning the nutritive value of honey and we hope to follow this up with some real scientific news on the value of honey as a food product.

TULSA COUNTY HAS ADULT CLASS

Believing that well informed people make good beekeepers, the Tulsa County (Oklahoma) Beekeepers' Association has promoted a class as a regular part of the adult education in the Public Evening School. Fifty-one students were enrolled the first night. The class is taught by Prof. G. A. Bieberdorf, of the faculty of Oklahoma A & M College. Subjects: Beekeeping as an occupation and as a hobby; Occupants of the Hive and their behavior; Handling and manipulation of bees; Bee diseases. Enrollment fee fifty cents.

AMERICAN HONEY GIRL



Beautiful, honey-haired Carole Landis, young star of the Twentieth Century-Fox studio is the "American Honey Girl." Miss Landis was selected for this honor by the members and affiliates of The American Honey Institute.

Lewis W. Parks, chairman of the board of directors of the Institute, announced the award at the same time he filed a telegram to Miss Landis in Hollywood informing her of the selection and inviting her to attend a Honey Institute meeting in Chicago to receive the Institute's official scroll.

"Several months ago," Mr. Parks said in explaining the award, "we decided to confer the title 'Ameri-

can Honey Girl' on the person, who, in the opinion of our members, seemed most to typify it.

"The standards we set were high. Naturally, the Honey Girl must have honey-colored hair. And she must have beauty, of course, but our requirements went beyond that. In mythology, the nectar of the gods, compounded of honey and spices, was reputed to impart a divine bloom, beauty and vigor to those who were so fortunate as to obtain it. In traditions among ancient races, honey was considered a sacred substance, symbolizing the purest and noblest in nature. We wanted a Honey Girl who would personify all these qualities. And Miss Landis is our selection."

Miss Landis, who is five feet five inches tall, and weighs 117—is a lovely blonde with blue eyes. She was born in the little village of Fairchild, Wisconsin—population today, 634—on New Years Day, 1919. Her family moved to California when she was but a few months old, first to San Diego for a couple of years, and then to San Bernardino. She lives today with her mother in a Colonial home in Brentwood.

Miss Landis has appeared in a number of pictures, including "A Day at the Races," "The Emperor's Candlesticks," "Varsity Show," "Four's a Crowd," "1,000,000 B. C.," and others. She is now under contract to Twentieth Century-Fox, where she is being groomed for stardom.

ORDER OF THE HONEYBEE

THIS MONTH'S COVER

ANNE-MARIE LOUISE, Duchesse du Maine, one of the most romantic figures of the 17th century, was the founder of the Order of the Honeybee. She was born in Chantilly on November 8th, 1676, a granddaughter of the great Conde, the celebrated French general, famous for skill and bravery in French wars and during the reign of his father (King Henry II) known as the Duke of Enghien.

The young duchess married Louis August de Bourbon, Baron de Sceaux, a member of the high French nobility. While her husband lived in Paris, attending to military duties, Louise Bourbon, as she was known, held court at her country seat, the enchanted palace of Sceaux. The estate was a veritable dreamland, replete with inspiration and romance. With respect to grandeur and luxurious entertainments, it rivaled the contemporary royal courts.

The festivities at the palace were renowned for revelry, ostentatious pageantry and glorious "tableaux vivants"; lavish in originality and ingenuity. Sylvan deities played a predominant role in all entertainments. The environs of her chateau, the entire valley of the Bievre, was pervaded with classical influence. The villages of the neighborhood had their rural deities. In the forests were figures of fauns, nymphs and satyrs, considered in mythologies as the protectors of bees.

The duchess, forever anxious to devise some quaint and ingenuous "coterie," founded, in 1703, the Order of the Honey Bee. Herself of royal blood, she was the Queen Bee, the perpetual "Grand Mistress of the Order." The elected knights represented worker bees. Romanticism and heroism had an irresistible appeal on her imagination. The Order was an elaborate parody of chivalry. Pompous reunions became an established and permanent amusement of her court.

According to the statutes of this eccentric Order, with a limited membership, consisting of both knights and ladies of the court, the newly appointed members were initiated by the duchess during solemn ceremonies. With a golden wand in her hand, the "Queen-Bee" sat on a throne beneath a huge canopy of blue velvet, edged with silver spangles. The throne chair and baldachin were richly studded with golden bees. The duchess was of diminutive stature, the delicacy of her features giving

her the appearance of some Ariel-like creature of the skies.

The first investiture of knights took place at Chatenay and was attended by members of the high nobility. The aspirants had to pledge themselves to appear at meetings which would require their presence, to champion the cause and to swear to honor the bees, to love gaiety, dance, and to wear and revere the insignia of the Order.

The new knights, while taking their oath of fealty, were decorated by the duchess. She first hung a lemon-colored ribbon with the insignia of the Order around their necks and then presented them with a gold medal. There was an insoluble tie between the Grand Mistress and those she had chosen as her "companions in pleasure." At every investiture, the following refrain was chanted:

"Viva sempre, viva ad in honore cresca

Il nuovo cavaliere della mosca."

(Long live in high distinction the new Knight of the Bee). A semi-pagan ceremony concluded the inauguration, with general merry-making, a sumptuous feast and finally a fancy dress ball.

The contemporary description of the medal is as follows:

"Medal of the Order of the Honeybee, installed at Sceaux on the 11th of June, 1703, by the Duchess of Maine, which shows her head with the legend in capital letters: 'Anne-Marie Louise, Baroness de Sceaux, Perpetual Dictatrix of the Order of the Bees.' On the reverse field, there is a bee flying to her hive with the inscription: 'Piccola si ma fa pur gravi le ferite'—1703. (I am small, it is true, but I can inflict deep wounds)."

It is evidenced by the form of the oath that the knights of this Order, at their initiation, vowed gayety, enjoyment and wit, which reigned at the court of this amiable princess: "I swear by the Bees of Mount Hymettus fidelity and obedience to the Perpetual Dictatress of the Order, to wear the medal of the Bee all my life, and abide, as long as I live, by the Laws of the Order: and if I betray my oath I assent, that the honey should change for me into gall and the wax into soot, the flowers into thorns and that wasps and hornets should sting me with their darts." (This medal, cast in 1703, is made of gold.)

Dr. Bodog F. Beck.



NEW RECIPE BOOKLET

Quite the most impressive setting forth of honey cookery we have seen is "Old Favorite Honey Recipes" just published by American Honey Institute. If you are looking for honey publicity (and who is not) do not fail to see this booklet.

The cover of the booklet is stiff paper, bright yellow in color, designed, as shown above, in cross stitch; and this cross stitch motif is carried with charming simplicity through all the chapter headings. The title page carries the Seal of Acceptance of the Council on Foods and Nutrition of the American Medical Association.

The many recipes are arranged alphabetically by subject: Beverages, breads, cakes, candies, confitures, cookies, desserts, frosting, meats, salads, salad dressings, sandwiches, and vegetables. And there is a section devoted to honey hints that is of particular value to women not accustomed to handling liquid honey. The plan of marginal identification for the various chapters facilitates finding recipes and adds to the appearance.

Prices to members of A. H. I. are 10 cents a copy, or ten copies for 80 cents. Prices on larger quantities (and surely everyone will want to use many of these booklets) may be had by writing to American Honey Institute, Madison, Wisconsin.

WILLIAM OSBORNE

William Osborne, 85, died in Englewood Hospital in Chicago, April 4. He was born in Wilmington, October 3, 1855. He had large farming interests in Goose Lake township and gained considerable reputation in raising pure blood poultry and was an honorary member of the state beekeepers' association.

C. J. Anderson,
Morris, Illinois.

WE VISIT THE SOUTHERN SHIPPERS

By M. G. DADANT

THE aboriginal Indian tribes which drifted south away from the rigorous northern winters had the right idea. At least Bob and I arrived at that conclusion after a crowded three-weeks' trip into the southland.

We left home April 1, that gloomy, dormant time of early spring, just as the last snows were disappearing. It was Bob's first trip south and my first at this season of the year. It seemed that Nature was conniving to show us her surprises even as the first day advanced. Before bedtime we were in southern Illinois where jonquil, hyacinth, and narcissus were in bloom. Through Tennessee, peaches and plums were blossoming, the leaves were beginning to show on the trees, and gardens were coming up.

By the time we reached Montgomery, Alabama, on the third leisurely day out, the South was in full bloom. Iris, crab apple, japonica, azalea, forsythia, and redbud were in bloom everywhere. A week later when we reached Mobile and had the opportunity of visiting Bellingrath's Gardens (Charm Spot of the Deep South), the azaleas and japonicas were already just a little past their best, though there was still much to see in these gardens covering some sixty acres, as there exists there a continuation of bloom of native and cultivated plants which we advise every lover of flowers and nature to see.

Ours was a business trip. As we wanted to see what the queen breeder and package shipper did with his time just before active shipping season, and as we were not able to cover the whole south, we chose to visit breeders in Alabama and Mississippi this year. We had the happy opportunity in having with us in Alabama the new inspector for that state, Harry Laidlaw. His chief, Alabama's able Commissioner of Agriculture, the Honorable Haygood Patterson, anticipates that the pathway to progressive apiculture is not through clean bees alone, but through efforts at selection and improvement in individuals and strains and races, for the benefit of the breeder and his present and potential customers in the North. Laidlaw, with his experience and training, should be just the man for the job. A trip with Mr. Patterson through Rosemont Gardens, probably the South's foremost greenhouse, in which Mr. Patterson, together with

his sons and nephew, is interested, gave us an idea of the grasp the commissioner has of that part of the agricultural picture. Our conversations with him led us to believe that he has made a judicious selection in his new state bee inspector.

Our two days' stay in Montgomery was underlined by a continual drone of training planes from the two army fields located there. The South had an air of action, industry, and preparedness. The people bespoke it. Alabama and Mississippi, at least, seem to sense the gravity of our present world situation much more acutely than does the Middle West.

As there is a month's difference between the blooming periods of many southern and northern honey plants, one might assume that the southern breeder would have no difficulty getting queens and packages in ample time for the northern trade. But blooming dates of the flowers are not the only consideration. Important also is the opportunity of the bees to work on these flowers; it is the duration of warm weather, which affects pollen gathering and brood improvement, that counts. One may have ever so much sugar for bee feed and ever so many good queens. If one does not have weather suitable for pollen and nectar gathering, and colony growth, he is likely to face the shipping season with difficulties which we northern buyers may not realize.

The time may come when the breeder will fortify himself with many of these requisites by winter packing and pollen feeding. It appears that he may be faced with this alternative as the shipping dates of the northern buyers continue to advance. May 1 used to be the early shipping date. Now May 1 is becoming a late shipping date. Bees are wanted by April 25, by April 15, and even by April 1.

But additional pollen stores, additional care, additional packing and feeding are items of cost, and package prices already are low enough. The time may come and probably should come when orders for early shipment should get such priority only at an advance in price.

In agriculture the effort in the South is for diversification. We saw evidence of it at the college at Auburn, Alabama, at State College, Mississippi, and in the fields and on the plantations. A one-crop-minded section must necessarily be slow to change to diversified farming, but the

change is coming. It means more stock, more pastures, more green manures to turn under, and less dependence on the fertilizer bucket. Naturally, as the legumes come in, some of them will furnish bee forage; and the South may again become a field for honey production, as it is now the field for queen and bee breeding.

The South needs an all-year-round bee pasture. White clover is being brought back in many places; vetch, a satisfactory honey plant, is highly recommended. After this trip, it is possible to see clearly why Frank Pellett is agitated in his efforts to find more plants which will furnish honey and, at the same time, fit into the agricultural program. Were sweet clover to wane in the North as it did wane in the South a few years ago, many a commercial beekeeper would find himself out on a limb with his apiary investments.

Do not assume that there is no honey in the South. There is honey, mostly from native honey-yielding plants. The South has no cultivated plant, like sweet clover, to add to its natural flora and make it an outstanding honey producing territory. The South will have to intensify its present agricultural change before such a plant can put in an appearance. Clay Lyle, state entomologist of Mississippi, is authority for the statement that already in the prairie sections of the South wild vetch, hairy vetch, white Dutch clover, and other plants are sufficiently abundant to warrant satisfactory production for a moderate number of colonies.

But, in general, the best honey yielders are the native plants found in the swamp areas and territory adjacent—black, sweet, and tupelo gum, titi, chinquapin, willow, gallberry, and holly. The hills furnish tulip poplar, sparkleberry, sourwood, redbud, etc.; and in some sections these sources are still fairly abundant. A. L. Webb told me that in his section, which is both highland and swamp, he had counted over sixty honey producing sources within reach of his apiaries. The addition of a major cultivated honey source could alter the beekeeping of the region very materially. If this were done, honey production would challenge bee production, particularly at the present low selling prices of packages and queens.

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BEES ON THE CLOVER

THE VALUE OF HONEYBEES AS POLLINATORS

By C. R. CRUM*

JUST as sure as every duck needs water, so every clover seed producer needs honeybees to assure good pollination for a profitable set of seed. The sorrowful laments of some of the older seed producers over losing their best friend, the bumblebee, does not necessarily spell calamity in light of recent studies on pollination of clover. The old adage about "no bumblebees, no clover seed" began to be questioned several years ago when specialists in entomology started investigating pollination methods by insects.

Since the field covered by the author of this article is limited to one county, it should be understood that conditions vary, and what might work in one county might turn out differently in another county or another state.

Wyandot is a small county located in the north central part of Ohio. According to the last farm census, the two thousand farmers here produce from six to seven thousand acres of little red, English, and alsike seed

each year. About one out of every four farmers depends upon clover seed for a part of his yearly income, and their average yield is slightly over one bushel per acre.

In the spring of 1936, several farmers were gathered in the extension office discussing various topics, when the conversation turned to clover seed. One farmer stated he always had good clover seed yields and he thought it was because an old house standing on the back part of his farm had been taken over by dozens of colonies of honeybees.

During the next few months, farmers were contacted on many farms bordering the few large apiaries in the county and it was found nearly all of them were securing better than average yields. One farmer was interviewed who had kept at least twenty-five colonies of bees on his farm for a good many years. He was a regular producer of seed and had never had a failure of English clover. His farm account records revealed that he had averaged better than two bushels per acre over a long period of time. His little red clover

yields averaged slightly under two bushels with yields of three bushels of clean seed not uncommon.

Bee population in the county, back in 1900, had numbered around 1,500, but this number had dwindled down to less than 1,000 colonies by 1936. If honeybees are of any value to clover seed producers, the farmers should know it; but first there should be more proof than mere observations of a few spots in one county.

Dr. W. E. Dunham, extension specialist in beekeeping, at Ohio State university, was called into the county; and, as he was interested in this same problem, arrangements were soon completed to find out just how much value the honeybees were in pollinating clover.

A field of alsike was selected for the first year's work. Two cages were erected along one side of this field, each cage covering an area of one square yard. The frame of one was covered with fly screen and a small colony of bees was placed against this cage with the hive opening into it.

The frame of the second cage was covered with cheesecloth and was so

*Mr. Crum is the county agent in Wyandot County, Ohio—Editor.

designed that no field insects of any kind could get into the area to do any pollinating work. The cages were set up and the bees introduced just ahead of the first clover bloom.

As soon as the clover seed was well formed, one hundred heads were selected at random from under each cage and one hundred heads were gathered from the field at large.

Seed counts made from these heads showed that from the cloth cage, where no insects were permitted, the clover seeds were all mutes or blanks and no seed developed. The seed count in the open field averaged fifty-seven seeds per head. In the caged area where the honeybees were confined it was found that the clover heads averaged one hundred seven seeds or almost double the amount found in the open field. After the entire field had been harvested by the owner, he reported a yield of one bushel of clean seed per acre, which he marketed at \$11 per bushel. If honeybees could double the number of seeds per head and could have been supplied to the entire field, the income to this farmer would have been increased by \$242. By applying the same reasoning and arithmetic to the clover seed acreage in the county, that year the farmers' income could have been increased by \$75,000.

The results of this first experiment was so encouraging that another field was selected in 1938 and the same method of proving the value of honeybees was tried again.

This second field was selected in a community in which there were practically no honeybees located anywhere within a three mile radius. The field selected for this experiment was about ten acres in size, and had as beautiful and thrifty a stand of alsike as could be found anywhere in the county. All indications pointed towards a record crop. Very little insect activity was noted on this plot during the pollination season, and it was soon discovered that the seed set was very low. At the conclusion of the experiment, it was found that the average number of seeds per head in the open field was only 4.6, and the farmer did not even cut or harvest the crop. The seed count made in the cage containing the honeybees showed there were 125 seeds per head. This large count with the harvest stand that was on the field would have made an outstanding yield of several bushels per acre.

Seed counts made in another field of alsike located within a mile of a commercial apiary gave a seed count of over thirty-two per head. Being satisfied now that the honeybees were valuable in alsike seed pollination, the county requested Dr. Dunham to try out this same plan on red and big English, as the general opinion of the

farmers was that only bumblebees were able to pollinate these varieties. The experiments were carried out in the same manner on red and big English clovers as they were on the alsike, but the results were somewhat different.

Field observations made during the pollinating period showed that there was a very large amount of pollinating insects working on both fields and a very high seed set was found in both cases in the open field. It was found, however, in the cages where the pollinating was limited only to honeybees that the seed set was practically equal, to the area that was open to all insects. This proved that the honeybee could pollinate the red clover, as well as the alsike, and in

all probability in a year of less activity on the part of the insects, the honeybees might prove just as valuable as they did on the alsike.

Clover Pollination Studies In Wyandot County

Year	Average No. seeds per head in cloth cage—no insects no wind	Average No. seeds per head in wire cages honeybees only	Average No. seeds per head Open area—Natural insects plus wind
Alsike Clover			
1936	.4	107.0	57.0
1938	.4	125.0	4.6
1938	—	—	32.8
Little Red Clover			
1939	1.1	55.5	63.0
Big English Clover			
1939	0.0	60.1	50.8



Above—One of the test fields in Wyandot County showing, in the foreground, the testing colony and, beyond, the screened area for checking seed set. Below—This illustrates how an area of a field is marked off to obtain a count of the insect population.



Dr. Dunham has carried on a number of experiments in other counties in Ohio with practically the same results as were secured in Wyandot, but he advised that the number of tests are not large enough to be conclusive evidence, although they certainly pointed towards a new star in the honeybee's crown.

As is the case in most farm problems there are many things to consider in using bees in improving clover seed production. One of the first problems is that honeybees are more attracted to sweet clover and possibly to small white clover; and if a field is available, they may desert the alsike or red clover field for this more attractive nectar or pollen. This is not serious, however, in Wyandot County, as the sweet clover acreage is very low compared to the acreage of the small clovers.

With the small amount of information available on the number of bees necessary to do satisfactory polli-

nation work in a community, a goal has been set up to increase the bee population in Wyandot County to 4,000 colonies. This would provide twenty-five colonies for each bee community for a radius of approximately three miles. Such a goal might not give maximum results but it certainly would increase the county income from clover seed for which it is well adapted.

In reaching the county goal, another problem is presented. That is marketing the extra honey produced. An effort has been made to sell the farmers on the value of the products of the bees as well as the value of their work as pollinating insects. The extension agent discussed this at seven of the Farmers' Institutes in the county last year. The beekeepers are promoting their sales by local advertising and by distributing recipes for cooking and baking with honey.

Upper Sandusky, Ohio.

Jere Frazer, branch manager for the G. B. Lewis Company, was in the group but everyone claims that he talked more than he worked, anyway, he got credit for being on the job.

S. E. Bailey, who runs quite a large number of colonies of bees for himself and others, furnished his two helpers, Walter and Lloyd Rohenbahr.

Bert Woodman and his son, Baxter came all the way from Grand Rapids, Michigan, to join the party. Confidentially, I do not think they intended to work because they did not bring their hammers; however, someone made them go to a hardware store and buy two hammers and so they did not have any excuse to stand around and watch the others work. Now, the smoker manufacturers know how to assemble equipment as well as manufacture smokers.

Our good friend, R. D. Hiatt, Columbus, Ohio, said his bees were hanging on the outside of their hives, but they would have to wait another day because he was going to help his friend Lloyd, in the time of trouble. He did more work than anybody and he told more yarns while he was working than even Charlie Reese. Most every beekeeper in Ohio knows Bill Coulter, because he was the president of the association for two or three years. Bill came along with his stool to see how many Lewis bodies he could assemble in one day. The only trouble was that his stool didn't do him any good because when Bert Woodman saw that it was a stool equipped with the latest style of upholstered cushion, he took it away from him and so poor Bill had to stand on his feet all day to nail the bodies.

Ray Bailey, of Columbus, who runs Mr. Coulter's bees, made a record for wiring frames. He claims he wired 1,500 in one day, but some of the group claim that Ray wants credit for the frames they wired.

This group of volunteer workers assembled 370 complete hive bodies in one day. We think this breaks all records, not only for the number of bodies assembled in one day but for all of these busy people to take time off from their regular work which is pressing them very much at this time to help a friend in need.

While we are talking about this fire and about the group of loyal friends who appreciate all the work Mr. Gardner has done for the Ohio beekeepers, I cannot resist the temptation to warn all beekeepers never to store all of their supers in one place, even if the fire had happened in the winter when there would have been plenty of time for Mr. Gardner to assemble his equipment, there would have been a great loss, but in

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GOOD NEIGHBORS IN OHIO

Lloyd Gardner, president of the Ohio Beekeepers Association, lost all of his supers in a fire which burned his modern honey house to the ground.

The Ohio bees wintered very well and just at the time when Mr. Gardner began placing supers on his thousand or so colonies of bees he had this fire which destroyed all of his equipment. He ordered quite a lot of equipment, which had to be made specially because it was such a large order.

Dr. W. E. Dunham, extension specialist in beekeeping, and Charles Reese, chief apiary inspector, saw Mr. Gardner's predicament and they notified a few of Mr. Gardner's friends to assemble at Dr. Dunham's honey house and nail this equipment for Mr. Gardner. Despite the fact that all beekeepers are very busy at this time of the year, many of them put off their own work to help Mr. Gardner nail his equipment.

The beekeepers who have heard Dr. Dunham speak at so many of their meetings would not have known him because he had some dirty overalls and he nailed about 1000 frames. They would never have recognized this man as being the same college professor who gives them so many wise suggestions at their meetings. Charles Reese, our good friend and inspector, wore even dirtier overalls and he was pretty well whipped out because he tried to nail two frames

to Dr. Dunham's one.

It takes a fire or some other calamity to know who your friends are, and to make you realize that there is so much brotherly love among the beekeeping fraternity. Emerson Long, who operates around 3,000 colonies of bees could not possibly get away because he has so much new help, but this did not prevent his doing his part, for Lloyd Gardner. He sent Harold Brown and Junior Breau-count, two of his best workmen, to help the cause. Our good friend Dr. H. F. Brown, the best and only dentist in St. Paris, Ohio, who operates some thousand or so colonies was too busy pulling teeth to get off. He claims that his patients who had the toothache would not excuse him even to help a good friend in trouble, but he sent his partner, Bill Neumeir, of Conover, and his chief assistant, Jarold Sidesinger.

Not only did the large beekeepers take part in this nailing bee, but novices as well responded to the cause.

Harold Lucks, sales manager for the Smith Agricultural Chemical Company, Columbus, Ohio, is just starting with bees this season and he has started with three colonies. Well, he forgot about selling fertilizer and his three colonies of bees and he wired frames with the old-timers.

E. M. Kennard, Greenville, Ohio, another large beekeeper, drove 100 miles to join this group of nailers.

EXPERIENCES IN HEATING HONEY

By E. L. SECHRIST

MANY of my articles on apiary management and honey handling may appear as dictatorial statements, but this is so only because of the necessity for condensing the material, giving only the conclusions rather than the steps leading to their formation. I prefer working up, step by step, to the climax, so that the reader may follow and convince himself instead of taking my word for the facts as I have found them. Sometimes someone will point out an error along the way which may change the conclusions. But space and time do not permit.

There are two kinds of experiences with bees. First, the experience in which a beekeeper lives and works in one place all his life as Dr. Miller and A. I. Root did, becoming familiar with the conditions there and working out a system perhaps not applicable elsewhere. Second, experience such as mine has been. I have kept bees from twenty-five colonies up to sixteen hundred, over a period of more than thirty-five years in

Ohio, twenty miles from Medina, as a disciple of A. I. Root; then in western Ohio; in the Tri-County Association area; in Illinois; California; Maryland; Hispaniola; South Africa; and Tahiti. All this I had the good fortune to supplement, both by experience and observation, in Federal work for fifteen years largely in the Mountain and Pacific Coast states, making a total of fifty years of actual work, observation and experiment with bees.

Starting as a beginner, getting my colonies from their homes in trees, I was quite a beekeeper when I had twenty-five colonies and produced a ton of white clover honey in Ohio when I was twenty years old. When I moved to California and had six hundred colonies and produced enough honey to consider myself a commercial beekeeper, I began to have new experiences. Perhaps the most valuable part of my experience, however, came during the fifteen years I worked for Uncle Sam, which gave me the chance not only to talk

with many advanced beekeepers, but to work with them, use their equipment and to find out things, not only for myself but for all beekeepers.

It was a rare privilege to visit so many good beekeepers three times a year for two or three years, with the privilege of staying with them as long as I thought necessary, even three or four days at a time. First would come a winter visit with time to talk, **finding out what the beekeeper expected to do during the season.** Then the second visit when the bees were building up for the honeyflow **when I could see what he actually was doing.** The third visit was made during the extracting time **when I saw what he had succeeded in doing.**

Through this work I had a chance to see and to participate in doing hundreds of things which I could never have done had my experience been limited to my own apiaries in one place. I consider this education the biggest thing in my beekeeping and the one which made it possible



The author in a corner of his apiary on the Island of Tahiti. He has kept bees in many parts of the world.

to formulate the principles I have tried to give in my series of articles in the *American Bee Journal* on "Honey Getting."

And the questions I asked! I well remember one of the many times I visited Oscar Schmidt in Michigan. He was not at home and I saw the children. They went to call their mother and I heard her ask who was there, to which the boy replied, "Mamma, it's that man who wants to know all about everything."

Heating Honey

Often, in parts of California and elsewhere, the nights were cool, particularly in the latter part of the extracting season, and honey must be warmed in order to strain it or even to have it clarify by settling in a reasonable time. Bees may be driven down by cold nights from the upper two stories if the hives are four stories high, or from one story if they are three stories high, so that all but a few bees will be off the combs of sealed honey. In the early morning, I have often jerked off quickly, without smoke or brushing, and taken into the honey house fifty or more supers, sufficient to give me enough for a day's extracting. These supers would be well filled, some weighing as much as 85 pounds, and practically all sealed. The bees had left them because the outside temperature was low. Even here, in Tahiti, in the tropics, the temperature was 62° F. this morning, and the bees were driven out of the supers, believe it or not.

California alfalfa honey, sealed, thick and cold, was quite dense, and if I were to run my daily stunt of twenty cases through alone, strain it through cheesecloth, put it into cans, have the cappings melted and the wax in clean cakes, and the empty supers back on top of the two-story brood chambers before nightfall, the honey had to be heated so it would move lively. That made me experiment, since I had to make my own apparatus.

I heated some honey in a tub with constant stirring. That was too slow. I had no steam, only oil stoves. I tried a modification of the Australian type of honey thickener or heater, an open pan, or series of pans, with partitions causing the honey to flow back and forth across a hot surface; tried a large open pan 6 inches deep with hot water bottom, such as I saw later in use in New York, and experienced the usual difficulties of the pan overflowing if the heat was a bit too low, or if the extractor was operated too fast. It was difficult to adjust this system and keep it adjusted, particularly as oil stoves occasionally flame up or run empty and go out.

I found it necessary to have a sump-separator tank to serve as a safety

valve for this outfit, but even then it was not satisfactory. I also found it unsatisfactory to have only an inch or two of honey flowing through a pan of this type, so I reduced the flow and lengthened the pan until it was 12 feet long and 1 foot wide, with enough hot water about 6 inches below it to serve as a safety valve and keep hot even if something did happen to my oil stoves when extracting was proceeding rapidly.

Later, I made the pan wider and not so long, with honey flowing in steadily at one spot and being distributed well over the pan, as I have already described in "Honey Getting," as being one of the best ways of heating honey, quite safe, easily controlled, and capable of

handling honey rapidly. This worked, even with the oil stoves, and with steam for heating, only a shallow water jacket of about 2 inches deep is needed, the heat being constant and well under control.

I have seen no better method of heating honey after it leaves the extractor. Heating combs of honey before extracting or heating honey in the extractor is also good, but these methods I did not see until I visited the Mountain States where sometimes I saw piles of filled combs being heated crudely by covering with a tarpaulin and introducing live steam beneath. This is an emergency practice and not good because of condensed water dripping over the combs.



RASMUSSEN'S METHODS

[Frank Rasmussen's method of colony management is interesting in several particulars as noted by M. G. Dadant in the May 1941 issue. Here are further directions, with emphasis on the brood chamber manipulations.—Editor.]

USE a 10-frame hive body with only nine frames in it. When manipulating for swarm control, take one frame with a little open brood and the queen, together with the two outside combs containing honey, and put them in another 10-frame hive body; the comb of open brood and queen in the center, the two combs of honey on the outside, one on either side. Put three frames of foundation on either side of the frame of brood with queen. This hive body thus contains nine combs.

Leave the balance of the brood in the old hive body (that is, six frames of brood with adhering bees), but move the frames to the outside of the hive body, three frames on either side, and put two frames of foundation in the middle. The old hive body thus contains eight frames.

Leave the old hive body with the eight frames on the old stand and on the old bottom board. Put a queen excluder on top, and on top of the queen excluder put an inner cover with the hole for the bee escape open. Nail wire cloth over the entrance at the bottom board. Nail a wooden rim, one inch square on three sides of the inner cover above the queen excluder, leaving the front open as an entrance, and place the hive body with the queen and one frame of brood on top of this rim. The colony now has two stories, with only one entrance between the two hive bodies, the old entrance being screened. Below the new entrance fasten a board as a landing board. On top of the new hive body with the queen put the supers.

In this manner the bees have been

divided. The young bees, nurse bees, remain below with the brood; the field bees stay with the queen above, flying from the new entrance. Bees from below have access to the upper hive body only through the excluder and the hole in inner cover, and only in this way with the outside world. The queen is prevented from going below by the queen excluder.

As the brood emerges, the bees will fill the lower hive body with honey; but when the honeyflow stops, the bees will carry up all honey and put it in sections for eight days after the flow stops. The lower chamber will be practically empty of honey.

The wide spacing of the frames (nine in the upper body and eight in the lower body) will help to control swarming, also will the ventilation caused by the two entrances, even though the lower one is screened. The two frames of foundation in the lower body are directly under the hole in the inner cover, so the bees in going to or from the lower body are reminded that their brood nest there is unfinished, also a control measure. The six frames of foundation in the upper hive body give ample opportunity for comb building and room for the queen to lay. As the brood in the lower body emerges and the nurse bees become older, they move to the upper body and work as field bees. The upper body will thus have a scarcity of nurse bees, and the lower body a scarcity of field bees; hence, swarming is deterred in both of them.

Bees will destroy queen cells in the lower body, if found when brood was separated, because of the loss of field bees. Sections in supers will be very evenly filled, heavy and fully sealed. I am not quite sure as to this point, but Mr. Rasmussen told me so, and

some of my own experience bears it out.

The upper hive body, with queen and three old combs (of which one has a little brood) and six frames of foundation, with supers on top, will be practically the same as a swarm newly hived; and the lower story, below the excluder, with access only through the small hole in the inner cover, will be felt by the bees as not really belonging to the colony proper; hence will be quietly robbed out by the bees upstairs, when the brood has hatched, and the honeyflow stops. In any case, bees do not like to have honey stored below brood combs, so will remove it and place it above their brood, in the sections (or extracting supers, as the case may be).

The section supers should be prepared with fence separators without cross-cleats, and not with the usual solid wood separators. One slatted separator being placed $\frac{1}{4}$ -inch from the wall of the super, so the bees will have easy access to the outside rows of sections which will then be as well filled and finished as the rest of the sections. One-fourth inch strips are nailed to the side of the super to keep the separator at the proper distance from wall. The use of the slatted separators is very important, as the usual kind give very poor results.

Twenty-five two-pound packages of bees handled as above in 1939 gave an average of 140 pounds of section honey, as against an average of 145 pounds of extracted honey from other colonies, according to Mr. Rasmussen.

Axel Holst,
Lyons, Michigan.

NEW INSPECTION PROGRAM IN GEORGIA

Georgia has materially strengthened her apiary inspection service under J. H. Girardeau, state entomologist, who succeeded M. S. Yeoman, March 25. The new head of the Georgia Dept. of Entomology, a beekeeper himself and actively associated with the industry in Georgia for years, is determined to make Georgia's certification as perfect as possible and to see Georgia the leader in bee disease control.

One additional full time apiary inspector was immediately added to the force and plans are already under way to discuss with the beekeeping industry in the state, plans and means for greatly improving the inspection and control services of the Georgia Department.

ILLINOIS ASSOCIATION

Recently claims have been made by other states as to the largest memberships in the state associations. A perusal of the last available annual report of the Illinois State Beekeepers' Association shows that dues of 561 individual members were received during the period beginning November 11, 1938, and ending November 17, 1939. At the annual meeting of the latter date a reported attendance of 184 was recorded. Some county associations had affiliated their membership just previous to these dates and were not included in the totals.

More recent figures on the membership just received show 451 members for the period November 17, 1939 to November 8, 1940. Not all memberships are renewed promptly each year, the secretary of the State Association stating that the actual membership numbers around 650 different individuals over a two-year period.

All members of local associations are automatically made members of the State Association by the remission of 50 cents of the local dues (usually \$1.00) to the state organization. Each member receives the State Association Bulletin every two months and the annual report in book form containing a report of the annual meeting, including the addresses and other submitted papers.

The State Association is assisted by an annual grant of \$750 a year. In addition, beekeepers of Illinois are assisted by their State Legislature by an appropriation of approximately \$16,000 per year for foulbrood inspection program under a chief inspector and approximately thirty-four deputies assigned to thirty-one districts of the state.

Beekeepers of the state of Illinois are not forgotten at its annual State Fair in which in 1940 a total of \$1226 was offered as rewards, \$160 of which was reserved for amateurs. The latter competed for nine different premiums, the first prizes of which varied from \$6 to \$15, while the fourth place netted the exhibitor from \$1 to \$6. In the professional group, five premiums were offered for each of twenty-three different exhibits with first place varying in value from \$50 to \$5 and a fifth place giving a variation of \$1 to \$10. We doubt if any other state offers such liberal prizes to bee and honey exhibitors.

But if that is not enough just listen to this. At the suggestion of a Mr. Stanley Smith several years ago, honey cookery was introduced

into the Culinary Department where under the sympathetic assistance and cooperation of Miss Ethel Van Gilder, superintendent of this department the interest, as well as the entries and premiums awarded, have shown a steady increase with the 1940 Fair premium books showing a total of \$1975 in the Culinary Department of which a total of \$236 was offered in the Honey Division alone listed as follows:

Honey Breads and dough	\$40.00
Honey Cakes, Loaf and Layer	65.00
Honey Cookies	36.00
Honey Candy	24.00
Honey Jellies, Marmalades and Butter	35.00
Honey Canned Fruits	12.00
Honey Pickles and Relishes	24.00
	\$236.00

Honey has also had a prominent part in the State Fair Cooking School which is run in conjunction with the state fair, while the Illinois Honey Foundation, the ladies auxiliary, each year operates at close hand an information and display booth. For her interest and support of the honey culinary developments, Illinois beekeepers are extremely grateful to Miss Van Gilder, who has had charge of the Cooking School and the Culinary Department for several years.

Perhaps honey producers of other states may want to attempt to secure an increase in the premium awards for their products or better still have a honey division installed in the Culinary Department of their own state fair. The individual items, premiums, and rules for the classes listed are given in the Illinois State Fair Premium Book, copies of which may be secured by writing to the Director of the Illinois State Fair, State Fair Grounds, Springfield, Illinois.

Although numerous 4-H bee clubs have existed in Illinois, beekeeping was first given official recognition in 1939 when honey production was set up as an approved 4-H project. During the first year 50 boys and 2 girls operated one or more colonies (2 or more suggested). In 1940, a total of 101 boys and girls were enrolled in the 4-H Honey Production Project in 37 of the 102 counties of the state. This seems to compare quite favorably with an enrollment of 460 in a total of 13 central states in 1939. The University of Illinois has prepared a 4-H Honey Production Project Record Book and a Manual of Instruction for the project.

Dr. V. G. Milum,
Urbana, Illinois.

FROM OUR HONEY PLANT GARDENS

Indian Posey or Butterfly Weed, Morning Glory, Burnet

By FRANK C. PELLETT

Indian Posey or Butterfly Weed

WHEN the country was new, the prairie milkweed or butterfly weed, (*Asclepias tuberosa*) was very common. It was known to the pioneers as Indian posey or "pleurisy root." The beemen of that day recognized it as an important source of honey, but now it survives in few places except as an ornamental in an occasional garden. The flowers are a bright orange color and the plant is very desirable as a garden subject.

In 1887 James Heddon wrote concerning it in *American Apiculturist* that he would rather have one acre of pleurisy root than three acres of sweet clover. He stated that if there is any plant to which good land can be devoted for the sole purpose of honey production, it is this. He called attention to the fact that it never failed to yield nectar in either wet or dry weather and that it would grow on land too poor to produce profitable crops of grain. In the same magazine (January 1888) a Missouri

beekeeper praised the plant in like manner, saying that he had never known a year when it failed to yield honey in abundance.

The blooming period lasts about six weeks in July and August which is similar to that of sweet clover which has so generally replaced it in the Midwest.

Seed was planted in our test plots in the spring of 1938, but the plants did not bloom the first season. In the summer of 1939 they bloomed freely and were swarming with insects while the flowers lasted. So many butterflies were attracted that it was easy to see how the name "butterfly weed" came into common use. It was because of the fact that an extract of the root was used in medicine as a remedy for pulmonary troubles that it was called pleurisy root.

Although it is very evidently an unusually fine honey plant, we have but little hope that it will become common enough to be of much service to the beekeeper again.

Morning Glory

The morning glory family is a very large one with nearly six hundred species spread over a large portion of the world. Among them are some useful food plants such as the sweet potato, many fine ornamentals and some pernicious weeds.

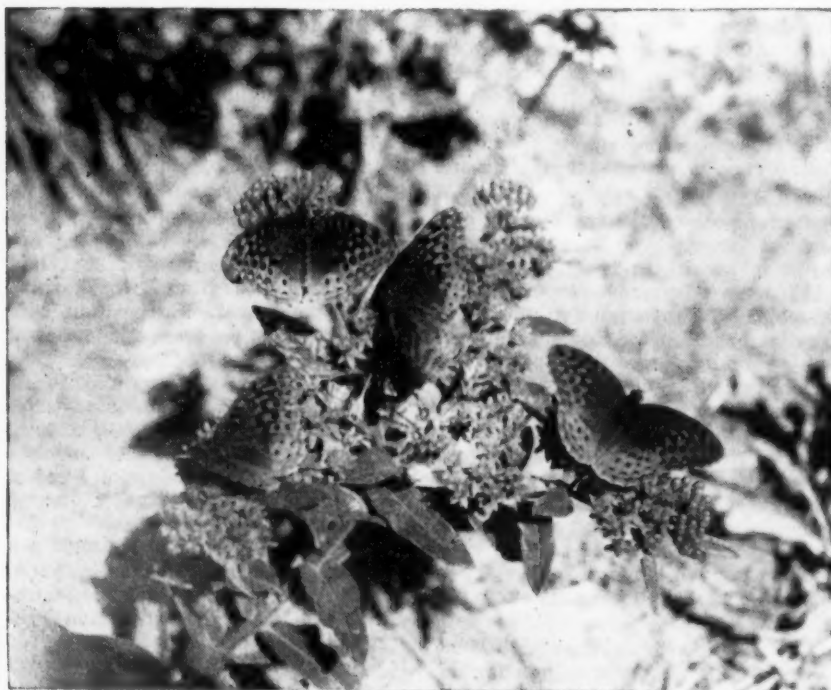
The ornamental vines are seldom sufficiently common to offer surplus honey even though the bees do visit them freely. The weedy ones are a source of never-ending annoyance to farmers who are constantly endeavoring to eradicate them.

This family of plants appears to be of more importance to the beekeeper than has generally been recognized. There is a small bindweed, native to Europe and Asia which has become widely naturalized in California. This species, *Convolvulus arvensis*, yields occasional surplus in areas where it is plentiful. It is a deep rooting perennial, spreading by underground rootstocks and difficult to exterminate. Once established it is likely to remain in the neighborhood for a long time. To the farmer it is a serious weed pest.

There are many species of morning glory in Texas, some annuals and some perennial. One, *Ipomoea trifida*, is commonly called tievine and is highly regarded as a source of honey by beemen in some neighborhoods. Another, *Ipomoea caroliniana*, is the source of a light yield of honey and pollen over a long flowering period from June until November.

It is from Cuba that we hear stories of big crops of honey from these plants. There they are known as Campanilla or Christmas bells because the height of the bloom comes near the holiday. There are two common species both perennial, growing everywhere over fences and wayside trees or other available support. One, *Ipomoea sidaefolia*, is white, while the other, *Ipomoea triloba*, has pink flowers. The pink flowered species blooms earlier than the white, which one is commonly known as Christmas bells.

The honey is of high quality, light in color and equal to the best alfalfa in flavor. Wax from combs built



Indian posey, or butterfly weed.



Heavenly blue morning glory blooming in the honey plant garden.

during such a flow is said to be pearly white equal to tallow in color.

Indications are that in this country more honey comes from the various species of morning glory than is generally known. The flowers are open in early morning and close later in the day. Masses of the improved garden varieties are a beautiful sight and attract not only honeybees but bumblebees, solitary bees, wasps and other insects as well.

It is probable that the weedy kinds which spread unwanted over fields and waysides are the ones from which most of the honey comes because they are so much more abundant.

Burnet

Burnet, (*Sanguisorbia minor*) is a hardy perennial native to Europe and Asia which is sometimes grown for pasture on dry soils. It is drought resistant and will stand heavy pasturing. It is also grown as a salad plant and some gardeners include it in the hardy border.

It is not often mentioned as a bee plant, but when in bloom the bees work it heavily for pollen. It grows rapidly in spring and fall but when cut for hay yields but one crop per year and thus does not compare with alfalfa. At the California Experi-



Burnet provides an abundant source of pollen

ment Station yields of 600 to 700 pounds of seed per acre have been secured.

It has been but little grown in America and not much information is available as to its value here. The fact that it withstands drought makes it worthy of consideration for many midwest neighborhoods.

Our seed was secured from the California Experiment Station through J. E. Eckert and planted April 13, 1937. Under conditions when few plants succeeded because of dry weather, the seed germinated promptly and grew rapidly. A good stand was secured and the plants seemed to thrive throughout the season. But few blooms appeared the first season so there was no opportunity to observe its attraction for the bees. At the close of the first season the plot looked very promising.

The plants wintered well and when they came into bloom the following year the flowers were swarming with bees. Apparently but little nectar is available but as a source of pollen burnet is splendid. It started flowering in early May and continued until early June. Few plants are equal in attraction for the bees and where pollen is short it is a suitable one to grow.

GARDEN HANDBOOK

"The Garden Clinic" by Laurence Blair (Macmillan, \$2.00) is a useful handbook dealing with the cultivation and care of annuals, perennials, shrub, trees and vines. The arrangement of the material is clear and all information is easily accessible. There is an adequate index. In a work of this size—146 pages—it has been possible to include only the more commonly grown plants. If the book has a fault it is that the unusual and rarely grown things are omitted, and often these present the difficult-to-answer question, as every amateur gardener knows. The culture of golden bells (*Forsythia*) is not particularly baffling, while planting and growing European larch (*Larix decidua*) is something people ought to know about.

But in regard to soils, control of pests, and, in general, how to get the most out of what you plant in your garden, "The Garden Clinic" is remarkably comprehensive. (Beekeepers with an apiary water problem will find the answer in the chapter on water gardens, which includes suggestions for pool-building.) The amount of text devoted to individual species is slight, but it is amply supplemented by drawings which are lucid and which point the text extremely well.

MICHIGAN GLANCES BACKWARD

AS Michigan beekeepers look back this year to the day seventy-five years ago when the Michigan Beekeepers Association was organized, they neither boast of the largest association in numbers, nor do they boast of being the oldest state organization, but they do look back with pride to the advancement that has been made in the last three-quarters of a century, and to Michigan's present rating as a leading commercial honey producing state.

More than sixty beekeepers assembled in the Board of Trade Hall, Jackson, Michigan, on April 7, 1865, and drew up a constitution that carried this preamble:

"WE, the undersigned beekeepers in the State of Michigan, and adjoining states, in order to avail ourselves of advantages to be derived from various experiences of each other, do hereby form ourselves into an association to be called, and known, as the MICHIGAN BEEKEEPERS ASSOCIATION; and adopt for our government the following constitution:"

At this first meeting Ezra Rood served as temporary chairman, while Prof. A. J. Cook, of Michigan Agricultural College, acted as secretary. The following officers were elected and became the first board to direct the policies of the organization:

President, Ezra Rood; vice-presidents, J. H. Townly, J. G. Portman, J. Harwood; secretary, A. J. Cook; treasurer, R. G. McKee; executive board, Mr. Metcalf, A. F. Mann, C. J. Balch, W. Huff, Mr. Tyler, O. E. Woolcott, J. Smith, Chas. Hastings, L. Foster, J. Rose.

At the first regular meeting held September 21, 1865, there was much discussion whether the honey extractor was going to be a practical invention, or just somebody's folly. Many prominent beekeepers decided it would become valuable as a means of removing honey from combs when hives became honey-bound.

A meeting was held March 23, 1866, at which time a resolution was passed to call a national meeting to be held August 10-11 at Indianapolis. September 21 marked the date of the second meeting that year and the topic causing the most comment was "upward ventilation."

By September 19, 1867, beekeepers were discussing artificial fertilization, foulbrood and dysentery. Among the new members signing up were James Heddon, T. F. Bingham, and Frank Benton, all well known to apicultural historians.

The problem of sanitary honey

houses came in for discussion during the next several years with most beekeepers using a packed earth floor.

In 1881 A. I. Root was made an honorary member, and L. C. Woodman, the father of A. G. Woodman joined the association. At the 1881 meeting, C. F. Muth read the first good paper on American foulbrood.

By 1887 beekeepers were beginning to seriously consider honey marketing, with many favoring the new sections of comb honey; some leading beekeepers contended that the nearer a pack of honey approached the price of one cent, the greater was the chance to develop the city markets.

Extracted honey, a new-comer to the market was finding good sales response when packed in small units, preferably the new green Mason glass quart jars. The majority of beekeepers, however, still maintained that extracted honey would never out-rate comb honey because the production of extracted honey required too much work and only produced 10% more honey than section comb.

Beekeepers complained that the new artificial comb (foundation to you) sagged too easily and would never become popular.

In the early years, before the turn of the century, we find many women were taking part in the lively discussions, many reading papers on queen-rearing, artificial fertilization, what well-dressed woman should wear in the bee yard, and what to do when a swarm issued while entertaining the Ladies Aid.

By 1887 beekeepers were accepting the new comb foundation but cautioned against its use in section boxes, although Prof. A. J. Cook stated it could be used satisfactorily in sections but warned against telling the public. Prof. Cook also warned against informing the public about any tin parts used in the hive and cautioned beekeepers against packing honey in metal containers.

Prof. Reed advised strongly against the purchase of cheap or dollar queens, stating that unless beekeepers continued to use the \$5 queens, the vitality of the bees as a race would become lowered. Prof. Cook showed a New Bingham bee smoker and stated they were worth \$25 of anybody's money.

Let's jump to 1909 and look at the Beekeepers' Review of January of that year. E. B. Tyrrell was the author of a lengthy article in that issue covering the formation and advantages of a co-operative organization, stating that such an organi-

zation would eliminate jockeying for price by buyers who pitted one producer against another. W. Z. Hutchinson, the editor, suggested that the beekeepers purchase \$10 shares and get going on a co-operative at once.

The Review of January, 1912, reported that G. E. Sanders, bee inspector of Michigan Agricultural College, inspected 150,000 colonies of 15,000 beekeepers, and when questioned, Sanders exhibited his figures at the meeting. At this time the State Association voted to present a foulbrood law to the legislature.

1915 marked the fiftieth birthday of the organization and was fittingly celebrated at the A. G. Woodman Company warehouse in Grand Rapids. Gold, silver, and bronze medals were awarded for the best exhibits of honey, and were to be retained by the exhibitor who won them three years straight. Floyd Markham, Ypsilanti, won possession of the gold medal and has the same today.

The State Fair of 1915 presented to the public one of the best honey exhibits in years. At this time we find F. E. Millen of the college suggesting "Eat Michigan Honey" stickers, stating these could be purchased for 25c a thousand, on colored paper with contrasting ink.

In 1918 a real effort was put forth to strengthen the membership of the organization and a concentrated drive brought the membership to 850 members.

It amuses us when we review some of the discussions of these early meetings, yet many an advancement was made in apicultural practices by the opportunities of many beekeepers to compare notes.

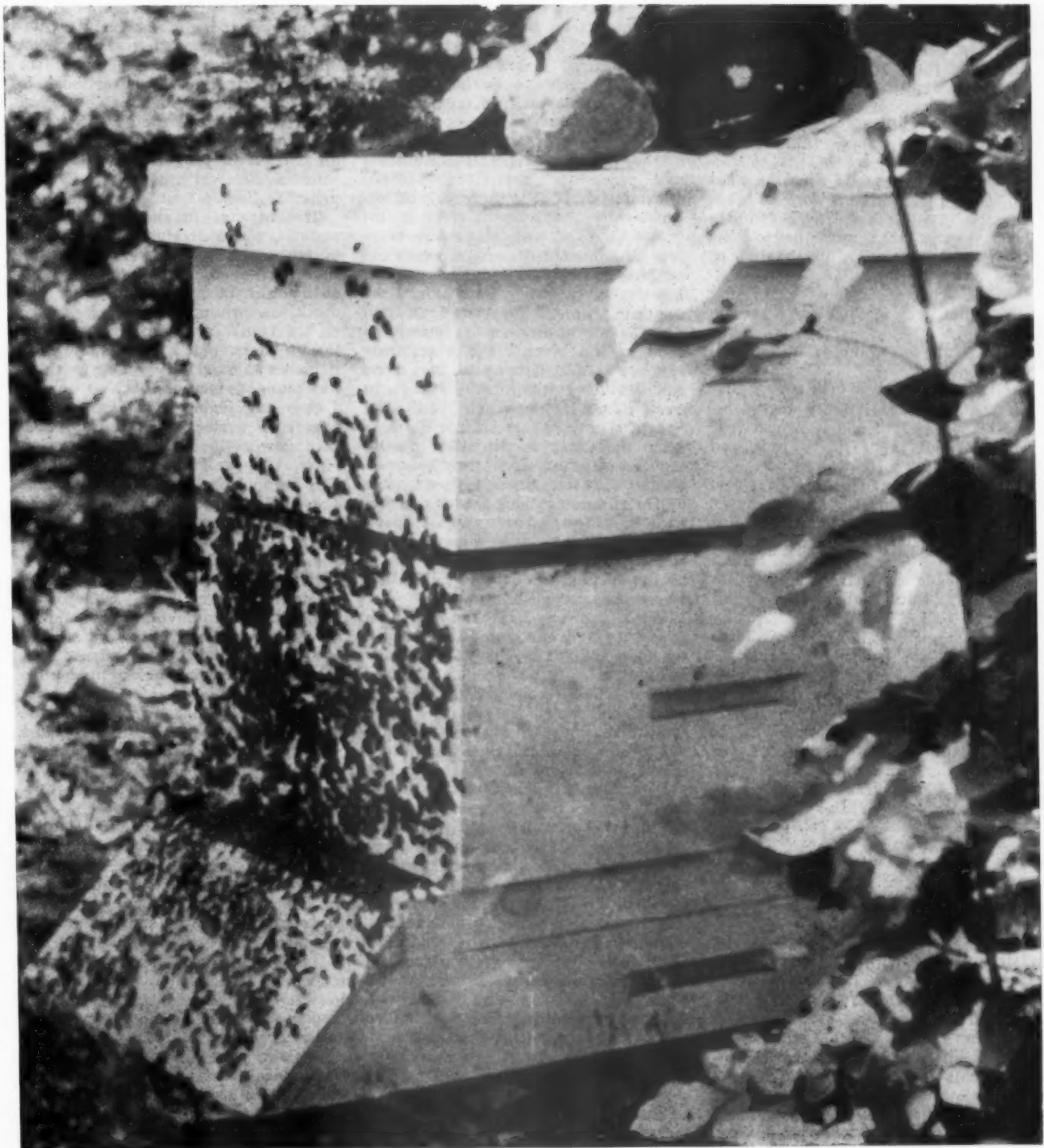
Michigan is often misunderstood in her efforts to protect the advancement made and its industry in general. Today we are proud of our low rate of disease, our new regulation requiring retail packs of honey to be graded U. S. Fancy, with the color stated. Michigan's program is not to merely keep bees—but to make them pay. One may readily visualize that Michigan has become a commercial honey state by noting that one-third the beekeepers of twenty years ago are producing more honey than produced at that time.

While we pay tribute to the many leaders who have departed this life, we still bear in mind that Michigan is going on to bigger and better apicultural practices under the leadership of our scores of present day leaders.

Elmer Carroll,
Lansing, Michigan.

SWARMING

Speculation concerning the swarming impulse has never ceased. Here, out of the pages of the past, men whose words on other weightier matters were listened to in those days deliver themselves of a few opinions on this perplexing phenomenon. Observe that the attempt is consistently to translate into terms of human behavior what, it seems, actually happens in the hive.



SWARMING

[The following extract is from the transactions of the North American Beekeepers' Society, at their Second Annual Session, held at the city of Indianapolis, on Wednesday, Thursday and Friday, December 4-6, 1872.—Editor.]

.....
Question 2. "How far have Italian bees been known to fly in a swarm before settling?"

Mrs. Tupper had them to go eight miles from her apiary. Had heard some reported as going thirteen and fourteen miles.

D. L. Adair reported a small swarm or nucleus as being found more than fourteen miles from his apiary, when his were the only Italians near to where they settled.

N. E. Prentice knew a swarm to come from Kelley's Island to the mainland, a distance of seventeen miles.

Aaron Benedict said when he went to Kelley's Island there were no black bees on it. While there he found a black swarm that must have come from the mainland, a distance of, at least, twelve miles.

W. R. King asked if bees on flying off did not keep in the same direction invariably.

Mrs. Tupper. They do nothing invariably.

Mr. Hawkins knew of a swarm that changed its course twenty degrees.

Mr. Southworth had a swarm that went straight about fifty rods and then turned at a right angle.

D. L. Adair followed a swarm through the woods for several hours and saw them change their course at least twenty times.

Question 3. "Why do Italian swarms leave the parent hive without first filling themselves with honey?"

Mrs. Tupper. They did not seem to prepare for swarming in all instances as the black bees do. They often swarm before any queen cell is started, when the hive is very populous. Many times they issue without filling with honey. They seem to swarm from the impulse of the moment. The swarming fever comes on suddenly. She could give no reason for it.

.....

CHARLES DADANT,
American Bee Journal,
June, 1879

TO migrate or leave home, in search of a better abode, is among the necessary faculties of nearly all animals. Man is not an exception to this law. This migration is always provoked, either consciously or unconsciously, by some uneasiness, such as the lack of the necessities of life,

the narrowness of the home, or by some other defective circumstances.

The human race shows, in past history, and even now, constant examples of migration. When these migrations include a great number of individuals they are called swarms. The bees, the ants, the locusts are said to swarm. These migrations are the result of the same law which governs the changes of residence of all the other kinds of animals, bees not excepted. I know that this assertion is not in accordance with the notions generally accepted by beekeepers, or, at least, that my idea never has been taught as absolutely as I suggest it; most of the writers having taught that swarming is the process by which bees increase the number of colonies, and some authors having even gone so far as to compare swarms to the fruit or seeds of a tree; but I think that I can sustain and prove the assertion, that all swarming of bees is the result of uneasiness.

No kind of animals shows more love of home than bees, yet every old beekeeper has seen bees leaving their hives in early spring, long before the swarming time. For instance, when bees have wintered in the cellar, as soon as the hives are put on their summer stands, it happens that some colonies desert their hives and go in quest of a new home.

I have noticed that such is the case when their stay in the cellar during the last days or weeks has been attended with uneasiness, either from a desire of voiding their faeces or from anxiety to go out—anxiety aroused by a too high temperature of the cellar. The bees, as soon as at liberty to fly, hasten to leave a habitation where they have suffered.

When a colony has been sick with dysentery and has stained its combs, the bees are apt to abandon the hive in quest of a cleaner abode. If, after cleaning the hive and giving them dry combs, we return the colony to the same hive, they will usually remain.

Now and then, at a time when there is no indication of swarming, we notice that a colony has departed from its hive, leaving honey and brood in every stage of growth in clean combs. If we look in the empty combs, we will notice that there is no pollen. The bees, being unable to raise brood successfully without pollen, have swarmed, rather than witness their brood perish. Generally, late natural swarms of the preceding year are those to which such accidents happen, because they were unable to provide a sufficiency of pollen for the spring. Such swarms, unfortunately, are not very rare. By giving them a good comb with pollen, we can return them to their hives, where they will stay, the causes of their departure having disappeared.

These unseasonable swarms are called, in France, "swarms of Easter," on account of the time in which they happen.

Nobody will contradict that all these kinds of migration are the result of the uneasiness of the bees, which have thus obeyed the great law of nature impressed on every race of animals, to hunt for another abode in view of finding more happiness.

Some beekeepers will object, that while these swarmings are the result of the miserable circumstances in which the bees were placed, it does not follow that what is known as natural swarming is the result of uneasiness; that natural swarming not only perpetuates, but increases the number of colonies. I beg here to say, that another undeniable law of nature is that the faculty of reproduction of all living beings, plants or animals, is in proportion to the surroundings in which each kind is compelled to live.

If a race is in the best circumstances, the individuals of which it is composed will live a long life, therefore, as the race has very little chance of disappearing from the earth, its prolificness decreases. If, on the contrary, a race is compelled to live in straitened circumstances, as it incurs the risk of ceasing to exist, its fecundity increases.

A young vigorous tree gives very few fruits; a decaying one is covered with flowers in spring. A flowering plant, too, well cared for, doubles. The organs of reproduction, stamens and pistils, disappear and are replaced by petals. A too fat animal is not so apt to reproduce its species as a lean one. Some rich married couples, too well fed, cannot have the joy of being blessed with children, while their poor neighbors have more children than they are able to nurse. A colony of bees, hived in a narrow box, incurs the risk of being unable to store honey for winter, it swarms; while a colony placed in a capacious hive, having no such risk, remains for years in the same abode without swarming. A too narrow apartment is the main cause of natural swarming. Too much heat is another cause. We can, therefore, in a great degree prevent natural swarming by furnishing our colonies with large hives, and providing them with an abundance of air and a protection against the too warm rays of the sun. Of course the large hive itself will not always be sufficient to prevent natural swarming unless we enlarge the room in time—I mean before the colony, having filled all the combs, begins to suffer from lack of room. I know that there are numerous exceptions to the law that I have written above; for although we have tried to prevent altogether the natural swarming of our bees, never have we been able to

obtain less than two or three swarms every year in our home apiary, numbering about 100 colonies.

I think that I can trace the causes of these uncalled for swarms. The extreme longevity of the queen is about 5 years, or 60 months. It follows that in 100 colonies the death of 2 of the 100 queens will occur every 6 weeks. If we add that spring is the season of fatigue for the queen, as well as for the bees, as she works, depositing eggs, more in the spring than in any other season, we will understand how it is that, even with all young queens not older than 3 years, 2 or 3 of our colonies lose their queens during the honey season. Besides, it happens that we sometimes maim or kill a queen in visiting our hives.

Of course, after these deaths the bees hasten to make queen cells on several combs. But as soon as a queen has emerged from her cell, the bees, that have built and nursed the other queen cells, are not ready to destroy them—if the honey crop is abundant in the fields—or to let the newly-hatched queen slay the others. The colony is then in the same condition as a colony which has swarmed and desires to send an afterswarm; the more so, because it is in full force. This is the most frequent cause of swarming in roomy hives.

But some beekeepers know that in some seasons bees swarm even with their hives half full of combs, and that, too, while their queens have remained alive and in good health. I have noticed such swarmings, which occurred during seasons of scarcity of honey. The brood was very abundant, filling all the combs; the bees seemed unable to find more honey than necessary to keep the hatching bees and the brood alive; they had none of it to put in store; they were crowded in the brood chamber, and had nothing to do in the upper story. Under such circumstances, who would dare to affirm that the bees were not tired of inhabiting a locality where they had no chance of surplus for winter; or that they were able to provide enough of pollen, or of honey, for the brood?

I have studied this question of natural swarming very closely. I have experimented with all the means indicated by the authors in bee culture, to prevent natural swarming. I have partially succeeded by dividing my colonies; but as a colony and its swarm do not gather as much honey as if it had remained whole, I have abandoned this method. I have tried the perforated sheet-iron, contrived by L'Abbe Collin, of France, to prevent the queen from following the swarm. I have tried, also, the queen guard of Quinby, from which the queen, with clipped wings, could not fly out. In both of these experiments I have obtained the same results: the killing

of the queens by their own bees. Then the colonies have swarmed with virgin queens, as soon as these newly hatched queens were able to fly; and the crop of honey suffered during all these preparation, on account of the dissatisfaction of the bees. Now, I have every confidence in the method that I pursue, for I have tried it for a long time. For ten years, with one exception, the number of natural swarms did not exceed three per hundred in our home apiary. To obtain this desirable result we use Quinby hives, enlarged to 10 or 11 frames before the swarming season, and covered with a second story holding 10 small frames, furnished with drone comb or comb foundation. With such hives, and, if necessary, a third and even a fourth story, we control as much as possible natural swarming, directing the full strength of our strongest colonies to the production of honey, and using all the colonies too weak to procure honey, in rearing bees to make artificial swarms.

Swarming is always the result of some want, or of some uneasiness of the bees, therefore, a colony of bees will not swarm in the following conditions:

1. As long as its queen is alive and healthy.
2. If its combs are dry and clean.
3. If it is always furnished with sufficient room for the queen to lay and for the bees to store honey.
4. If there is always in the hive a provision of pollen and honey sufficient for the needs of the brood and of the hatching bees.
5. If the heat of the inside of the hive is not sufficient to compel the bees to remain idle, inside or outside.

PROF. A. J. COOK,
American Bee Journal,
August, 1900

I think without doubt bees are incited to swarm because of something disturbing their peace. This is most commonly a crowded condition of the hive just at the dawn of the honey harvest. The combs are full of brood, the hive filled with bees, and the bees feel uncomfortably crowded and thus are impelled to divide up or swarm. That this is not the only cause is certain. Bees often swarm when they are not crowded at all. I think the most common cause, other than crowded condition of the hive, is from lack of honey. I have often known starvation to cause bees to swarm out and push for a new home. Here it would seem that they could not improve their condition by swarming, and we must conclude that a dis-

turbed state impels them to act. An untidy condition of the hive also drives bees out, or causes them to swarm. Nearly all beekeepers in the northeastern part of the United States have not infrequently had early spring swarms after a cold, disastrous winter. With spring came serious dysentery, and bees, queen and all rushed forth for a new home. While this does not seem so unreasonable as the last, the final result could not be greatly different.

When bees swarm naturally, that is, because of an overcrowded condition of the hive, nearly all the bees that are mature enough to fly, including drones and queen, push out from the hive in the event of swarming. It is not true, however, that the queen leads the swarm, as has often been stated. As early as 1870, I commenced the practice of clipping the queen's wings, and would advise all beekeepers to do so today. Thus I have many times watched the swarm as it issued from the hive, and likewise noticed the egress of the queen.

I find the queen rarely goes out until the last of the swarming out of the bees. Again, it is often stated that in case the queen does not join the bees in their swarming, either because she cannot or will not; then the bees do not cluster, but return to the hive. The last part of this statement, I think, is invariably true, that the bees will not go off without the queen, but will always return to the hive. It is not true, however, that they will not generally cluster. In my experience they will almost always cluster, I think, almost as often as the queen goes with them. For I have known, very rarely, however, the bees to go forth with the queen and yet return to the hive without clustering at all.

The time of swarming is generally from eleven to two, or near the mid-day period; yet I have known the time to vary not a little from this. I have known swarms to come forth at five or six in the afternoon. The late Mr. Moon once told me that he once knew a colony to swarm at the time of full moon, in the moonlight. This erratic swarming as to time, I think is almost always limited to afterswarms, where a young queen goes out with the bees.

The place of clustering is a matter of some interest. A tree or bush seems to be preferred, probably because it is convenient for the bees to cluster on them. I have known a post or fence to serve them in such a way. The height, too, at which the cluster is formed is a matter of interest. It is usual for the first swarm with the old queen to cluster low; while afterswarms, which of course are attended by young queens, may cluster far up in tall trees. I believe I have known

clusters as high as 30 feet, in tall trees.

Why do bees cluster at all? is often asked. We must remember that the old queen may not have tried her wings in flight for over a year. That she is able to use her wing muscles at all is hard to understand. I believe that the clustering is to give her a rest after her first exercise as she flies out, before she takes her long journey of one or two miles. It has been reported that bees sometimes do swarm and not cluster at all. I have known one case of this kind, myself. It was an afterswarm, and, of course, a young queen went with the swarm.

When do the bees select their new home? is a question of interest. It has been suggested that the bees cluster so that scouts may go forth in search of a new home. I have had positive evidence on several occasions that scouts go forth one, two, or three days before, to look out and clean out their prospective home. Once it was in the side of a house. The bees were noticed just before the dinner hour, busily going in and out high up by the cornice. It was supposed a colony had entered and taken possession. After dinner, we were surprised to find that the bees had all gone. We supposed that they had found their new home obnoxious. The next day a large swarm came and took possession of the place. I have since known a number of such cases. I have little doubt but that this is always true, and that the bees cluster simply to rest the queen.

The rate of flight of the swarm is very various. I once knew a swarm to fly nearly a mile, and one of my students followed it on foot the whole distance and located its new home. I have known other cases where one would need to be well mounted to keep up with a colony. Afterswarms fly with more speed.

We all know that there may be many queen cells in the old hive when a colony goes forth. I think that a first swarm rarely if ever issues until one of these cells is capped over. Some bees, especially the Carniolans, form an excessive number of such cells. We know that often all these cells are destroyed after the queen emerges from the first one. In case of such destruction the cells are always cut open on the sides. If, on the other hand, the queen liberates herself and comes out to fly forth, the cell is open at the end. In case several swarms are to issue—I have known five swarms to come out one after another from a single colony—the bees guard the queen cells so that the first hatched queen cannot destroy the others. As many beekeepers have observed, rarely several queens go forth with a new swarm. Some of our ablest beekeepers think that, in such case, the queens have been held

for some time in the cells, and in the excitement of swarming, the guards have lost their vigilance, and so several queens rush out with the new swarm. Much more rarely two queens will dwell in a colony, for a time, both laying eggs.

This article is quite long enough; but I wish to give a few rules which I think every beekeeper will do well to observe. I believe under ordinary circumstances that we would better be content with but one swarm per colony, each year.

I believe, too, that it is better always to clip the wings of all the queens, as this saves labor, and very likely may save loss, as no swarm will ever go off without a queen.

If, then, we wish only one swarm per colony, it is well worth-while to study the most convenient method to limit swarming. I believe by far the best method is the so-called Heddon method.

JOHN H. LOVELL,
American Bee Journal,
November, 1925

THERE are few events in the life of the honeybee, which are so widely known or awaken so lively an interest as the exodus of the swarm. From Virgil to Evrard poets and word painters have sought to depict the behavior, emotions and instincts displayed. To be sure, they draw not a little on the imagination, and suppose the bees to behave very much as human beings under similar conditions. But the adventure of a large part of the colony into the unknown is viewed by the most prosaic farmer beekeeper as a most remarkable occurrence. It is the purpose of this paper to inquire into the origin of the swarm flight.

It is seldom that our bee books attempt to answer this question, but occasionally they offer a suggestion or two, Edwardes believes that "the sexual spirit is again aroused in the queen just as it seems to be aroused for the first time in the worker bee, and that, with all, the journey is undertaken as a mating flight, a faint re-echo of a racial custom long extinct, bearing the closest analogy to the marriage swarm from the ant hills . . . In the sultry August evenings the young queens of the ant hills pour out in unnumbered thousands to meet the males, and people the ruddy sunshine with the glint of their wings. This is swarming in its truest sense." But this outpouring of the ant hill is not a swarm flight; it is a mating flight—a very different thing, as we shall endeavor to show.

In the April, 1923, number of the

American Bee Journal, Allen Latham has a noteworthy article on the origin of swarming, which is almost unique in bee literature. While he recognizes the influence of a super-abundance of bees in inducing swarming, he reaches a similar conclusion to that expressed above and inquires: "Does not the true cause of swarming lie in the residual sex instinct of the worker bee?" Like Edwardes, he compares the swarm flight of the honeybee with the nuptial flight of ants, and infers that in the early history of the honeybee swarming consisted of the departure from the hive of a great number of perfect females and drones. On the importance of a knowledge of the development of the swarming impulse he says: "Why do bees swarm is a question which has called out more discussion than any other one thing about bees, and the swarm impulse has roused more thinking among honey producers than any other problem. For it is a problem, and upon some sort of solution depends the honey crop."

The attempt to make the swarm flight a reminiscence of the mating flight is a very natural effort, and one which occurs to every investigator of this phenomenon. But in the case of honeybees the two flights are widely different and have little in common. In the mating flight the virgin goes forth usually alone with the intention of returning to the nest or hive. She is unable to found a new colony or even support herself. Her preliminary orientation flights and actual departure cause little excitement. She is attended by few or no workers, but is followed by a company of drones which come from several different hives. If the sexual instinct of the worker can be reawakened, it would seem that it should be at this time, when a virgin goes forth to her wedding, rather than when a fecundated queen leaves the hive. On her return she "lays, lays, all the substance of her mind and body fed to abdomen and ovaries," and never mates again.

But for the swarm flight the whole colony is in a state of preparation days in advance, and the culmination comes in a furious outrush of thousands of wildly excited bees. There is no intention either on the part of the queen or of the workers of ever returning to the mother colony. The old queen prevented from scimitaring her unborn daughters and fearing for her life has ceased egg laying for several days. Each worker has taken a load of honey from the common store, sufficient to last for several days. It is generally believed that scout bees have been sent forth to select a suitable site for the new home. A certain number of drones are swept along by the excited (Please turn to page 286)

DEPARTMENTS

White Dutch Clover



THIS AND THAT • • FROM HERE AND THERE

WISCONSIN ADVERTISES HONEY



Milk and honey are being featured in outdoor advertising as a cooperative project between the Wisconsin Beekeepers Association and the Wisconsin Department of Agriculture.

Three hundred and fifty posters, 7x9 feet in size were prepared in color by the Department of Agriculture. One hundred and fifty-six of

these were put up on boards controlled by the Department of Agriculture throughout the state, while forty were sent to beekeepers who wished to cooperate by putting them on their honey houses, barns, etc. The signs were left up for a period of six weeks—during the last half of March and all of April. The rest of

the signs will be kept and used again next fall for another campaign.

Wisconsin beekeepers by subscription quickly raised \$150 as their share of the project. The balance was paid by the Department of Agriculture from a fund appropriated to advertise Wisconsin dairy products.

Wisconsin farmers have found that it pays better to advertise their own products on their barns and places suitable for this purpose, than to allow commercial concerns to advertise products in which they have no interest.

Credit for first suggesting the joint project goes to Mrs. Harriett Grace, of the American Honey Institute.

H. J. Rahmlow,
Madison.

INTRODUCING QUEENS UNDER ABNORMAL CONDITIONS

If queens are to be introduced in the presence of young brood when little honey is coming in, the surest way to introduce successfully is to feed honey or sugar syrup. On the 11th of July I introduced four pure Italian queens to four hybrid colonies, nearly all of them black. To introduce them safely, I prepared a pepperbox feeder with sugar syrup. A fifth pepperbox was used to sprinkle the bees with when the hives were opened. Although the bees were cross, they became peaceful when syrup was sprinkled over them. The old queens were found and the new ones with their attendants in the cages were laid on the combs with the prepared syrup near them. An empty super was placed over each hive and the hive closed. Although little honey was coming in, all four queens were accepted.

Bro. Alphonse Veith, O. S. B.
St. Meinrad, Indiana.

NEW MONTANA INSPECTION SERVICE

After a lapse of eight years, funds have been made available for bee inspection in Montana. A new inspector has been appointed [see page

286] and work of inspection has begun. The revised bee law for Montana is interesting in several particulars. Prohibited is the movement into Montana of bees on combs, or second hand equipment, frames, etc. This does not affect the shipment into Montana of "live bees in cages where the bees are not accompanied by combs or honey," although the state entomologist may authorize permits for shipment of bees on combs into Montana. Combless packages must be accompanied by a certificate of health and movement of colonies within the state is subject to regulation and control by the state entomologist. Annual registration is required and substantial fines are provided for failure to register apiaries and for violations of other provisions of the act.

NEW BULLETIN

A new bulletin on disease control has recently been issued by the Extension Service of Iowa State College at Ames. It is entitled "Control of American Foulbrood" by F. B. Paddock, State Apiarist.

It is a booklet of 16 pages well illustrated and offering full information concerning accepted methods of dealing with this disease. Copies may be obtained by addressing Prof. Paddock.

"CONTROL OF BEE DISEASES"

This is the title of Extension Bulletin No. 256 issued by the Extension Service, State College of Washington, Pullman, by R. L. Webster, Entomologist. It gives the usual description of bee diseases and methods of treatment. Copies may be obtained at the address given.

"THE MODIFIED TWO-QUEEN SYSTEM"

A mimeographed publication is just received from Prof. W. E. Dunham, Research and Extension Apiarist, The Ohio State University, Columbus, Ohio. It describes a method of using the two-queen system, tested at the Ohio Experiment Station, which utilizes two queens during the spring building up period, reducing the colony to a single queen at the beginning of the clover flow. It has illustrations and charts of production. Those interested may secure copies at the address given.

JUNE, 1941

TOP ENTRANCE



D. Chalmers, of South Edmonton, Alberta, sends this picture of his bees wintered outdoors. The picture was taken in February on a mild day when the bees had a flight as shown. Mr.

Chalmers reports successful wintering with this tar paper packing over insulation with a top entrance, for a series of years, with practically no loss.

ARMISTICE DAY FREEZE



Many beekeepers will remember the Armistice Day blizzard and sudden freeze in November of last year. It caught many bees and as a result hive after hive full of bees and honey froze to death, unheard of before at the beginning of winter. One day it was good fall weather with temper-

ature near the 50 degree mark, and the next day it was below zero, with high wind and snow. These hives of bees brought together and photographed later in the winter represent my loss.

Leroy Baxter,
Blair, Nebraska.

BEES FOR SCHOOL CHILDREN

"Honeybees and Their Ways," is the title of a series of lessons for school children by Agnes Dawson, recently issued by the Blackhurst Book Company, of Des Moines, Iowa.

Mrs. Dawson has used the honeybee as a project in nature study in an Iowa grade school for several years. The result has been a great interest on the part of the children and a better understanding of the place which the honeybee occupies in the production of a staple item of food and in the pollination of flowers by means of the pollen which she distributes.

It would be greatly to the advantage of the rising generation if a similar project could be made available to the youngsters in our schools everywhere. Many teachers hesitate to take up such a study for lack of suitable material with which to make the daily presentation. The new publication is an adoption of the lessons used by Mrs. Dawson in her class work for a school year. Each is printed on a convenient card 8½x11 inches in size with an outline drawing illustrating the particular subject under consideration. Price \$1.95.

Beekeepers who are interested in a presentation of beekeeping in the local school will do well to call attention of the teacher to this publication issued by the Blackhurst Co., of Des Moines.

NEW INSPECTOR FOR MONTANA

The last session of the Montana State Legislature passed a new bee inspection law placing administrative authority with State Entomologist Dr. Harlow B. Mills. Joseph F. Reinhardt, University Farm, St. Paul, Minnesota has been appointed apiary inspector under Dr. Mills and will be stationed at the Montana Agricultural Experiment Station, Bozeman, Montana. He assumed his duties May 15.

Mr. Reinhardt is a graduate of the Iowa Agricultural College, later taking graduate work at that institution. For the past several years he has been a graduate student in apiculture at the University of Minnesota, and assistant in the department, and has been on the apiary inspection force working under the direction of State Entomologist A. G. Ruggles. He has done a considerable amount of research in apiculture, particularly along the lines of hive ventilation, wintering and bee diseases.

M. C. Tanquary.

RENDERING BEESWAX HOW TO LOSE MONEY

The attention of all beekeepers and manufacturers of beekeepers' supplies should be directed to the fact that beeswax must not be rendered in any tank or press that is not constructed of wood, aluminum, the proper kind of stainless steel, or that is not lined with porcelain. Because of my own experience and my long contact with beekeepers who were in the habit of producing beeswax of poor quality, I feel personally responsible for getting this information to you. Most beekeepers do not realize the loss they sustain by using plain or galvanized iron vessels for melting beeswax.

An investigation was undertaken at the Pacific States Bee Culture Field Laboratory, Davis, California, which resulted in United States Department of Agriculture Technical Bulletin No. 716*. In this bulletin it is stated that darkening of crude wax by contact with iron or oxides of iron is very common.

Beekeepers should get this bulletin and read it, and manufacturers should at once cease to make or to sell any types of press or wax melters not constructed in accordance with approved recommendations. Not to conform will be to continue the considerable loss which beekeepers now suffer through using poor wax melting equipment.

In my article, "How to Improve the Quality of Beeswax," in American Bee Journal for March, 1940, this subject was discussed. In this article I discussed the fact—proved in the bulletin—that much of the damage to wax contact with iron is because of its propolis content; and, therefore, that the damage to wax rendered from old combs or cappings from old combs is much greater than to wax from virgin comb and new cappings which are contaminated with only a minimum of propolis.

E. L. Sechrist.

*Technical Bulletin 716, Investigation on the Physical and Chemical Properties of Beeswax, by Charles S. Bisson, George H. Vansell, and Walter B. Dye. For sale by the Superintendent of Documents, Washington, D. C. Price 5 cents.

SWARMING

(Continued from Page 282)

throng, but there is no evidence that they ever attempt to mate with the queen or any of the workers. Unless the delay of the queen causes the return of the swarm, the old home is speedily forgotten. Clearly the behavior of the bees shows that the sole

purpose of the swarm is the founding of a new colony.

There is no evidence, in my opinion, of the revival of the sexual passion in the worker bee. When Edwardes writes: "For a single hour in her drudging, joyless, perfect life, the worker bee battens down all the virtues, and rages forth like the Sioux Indian to swirl at the stream of forbidden love and laughter unmindful of the cost," we can but smile a little, whether the bee does or not. This is purely imagination; it is the poet who is speaking, not the biologist. Hers is not the behavior of a wanton, but of an emigrant who departs with scant stores to establish a new colony. The reproductive system of the worker is rudimentary; the ovaries are feebly developed, and the globular sac which holds the sperms in the queen (the spermatheca) is wanting. With the loss of the power of copulation sexual desire has also ceased. The laying worker does not offer evidence to the contrary, for like the bringing forth of offspring, this act comes under maternal, not under sexual instincts. The maternal instinct has not been lost, it has been strengthened and specialized. Laying workers are relatively few in number and compose but a small part of the swarm. In the spring females of the genus *Halictus*, which have never mated (at that season there are no males alive) produce by parthenogenesis both males and females. The laying of eggs is thus not a manifestation of sexual passion. There is no evidence of a queen mating a second time nor of the display of sexual desire at swarming time; but she is commonly believed to exhibit jealousy, fear and anger.

Swarming always serves to disperse more widely the species, and in general the prime swarm benefits the parent colony by relieving it of a surplus of bees. It is nonsense to talk of swarming as a "lapse from an all-wise public policy." This is the view point of the practical beekeeper who looks upon the colony solely as a financial proposition and thinks that nature errs whenever she works against his pocketbook. It is better for the species for the parent colony to cast a half dozen swarms and perish than for it to survive swarmless. It cannot be too strongly emphasized that the welfare of the species always precedes the welfare of the individual; in like manner it is better for the individual to lose an eye or a limb rather than that the whole body should perish . . .

HONEY ORANGE COOKIES

By ELIZABETH CALE

Honey Orange Cookies

1 cup shortening
1 cup brown sugar
 $\frac{1}{2}$ cup honey
2 well beaten eggs
1 cup sour milk
 $3\frac{1}{2}$ cups unsifted flour
2 teaspoons baking powder
1 teaspoon soda
1 teaspoon vanilla
 $\frac{1}{2}$ cup nut meats or raisins
Grated rind of one orange.
Mix and drop on cookie sheet. Bake in moderate oven 375° .

Icing for Orange Cookies

$1\frac{1}{2}$ tablespoons orange juice
1 egg yolk
1 small orange rind grated
Powdered sugar
Ice while still warm.



FROM NORTH DAKOTA

At a recent meeting of the faculty women's club of the University of North Dakota, Miss Constance Leeby, of the Home Economics Department, discussed honey cookery before about seventy-five women. Mimeographed sheets on some forms of honey in cookery were distributed to the members of the club, and the refreshments consisted largely of honey cookery. The meeting was felt to be very successful from the standpoint of acquainting folks with the use of honey, and many favorable comments resulted. Miss Leeby's work in honey at the University of North Dakota was discussed in *American Bee Journal* for May, 1940. Here are two more of the recipes she has developed.

Honey Sea Foam

$1\frac{1}{4}$ c. granulated sugar
 $\frac{1}{4}$ c. sugar (brown)
 $\frac{1}{4}$ c. honey
 $\frac{1}{4}$ tsp. salt
 $\frac{1}{2}$ c. water
 $\frac{1}{2}$ tsp. vanilla
1 egg white
Cook sugars, honey and water together in a large saucepan, stirring

constantly until mixture reaches boiling point. Continue cooking until the temperature 242° F. is reached, or when mixture forms a slightly firm ball in cold water. Beat egg white until stiff. Pour syrup slowly from a height into egg white and continue beating until candy will hold its shape when dropped from a teaspoon. Add salt and vanilla and nut meats if desired.

Honey Drop Cookies

$\frac{1}{2}$ c. fat (part butter and part other fat)
 $\frac{1}{4}$ c. sugar
 $\frac{1}{2}$ c. congealed honey or
 $\frac{1}{2}$ c. minus 1 tbsp. if in thin liquid form
1 egg
 $\frac{1}{2}$ c. milk
 $\frac{1}{2}$ tsp. ground cinnamon
 $\frac{1}{4}$ tsp. ginger
 $\frac{1}{4}$ tsp. salt
About $1\frac{1}{2}$ c. sifted flour
2 tsp. double acting baking powder or $2\frac{1}{2}$ tsp. single acting baking powder
 $\frac{1}{4}$ c. dates, cut into rather small pieces

Cream fat, sugar and spices thoroughly. Stir in the honey. Add the well beaten egg. Mix baking powder with flour and alternate flour and milk—begin with flour and end with flour. Separate dates as they are being folded into the batter. Drop by heaping teaspoonfuls onto a greased baking sheet. Bake at 375° F. Makes 30 medium sized cookies.

Quick Marmalade

Plunge dried apricots into hot water. Drain and run through food grinder (fine knife). To each cup of ground apricots add $1\frac{1}{2}$ cups honey (liquid or solid). Blend thoroughly. Store in sterilized jars at least two weeks. This forms a spread of marmalade texture. Delicious on toast, hot biscuits, or as a filling for French toast sandwiches.

QUESTIONS AND ANSWERS

SINGLE OR DOUBLE BROOD CHAMBER

Is one hive body as good as two hive bodies for brood rearing?

MISSOURI.

Answer.—This depends on what kind of hive you use. The standard 10-frame or Langstroth hive body is not large enough for the brood rearing of a prolific queen. In using the Langstroth system, two hive bodies are necessary for brood rearing. We recommend and use the Modified Dadant hive because it has a larger brood chamber than the Langstroth hive, having frames 11¼ inches in depth and having eleven frames to the brood chamber instead of ten. These eleven frames give plenty of room for a prolific queen.

MOTHS

Can moths kill a strong colony of bees?

MISSOURI.

Answer.—Moths will not kill a strong colony. As a matter of fact, moth do not kill bees ever. They do destroy the combs and then only in colonies that are weak and that are not occupying all the comb space in the hive body. Moths will devour such combs as the bees are not using, so if a colony is weak, much of the comb would be destroyed. If a colony is moderately strong, some of the comb might be destroyed. If a colony is quite strong, it will likely be occupying all the comb space it has and it will not tolerate moths in the hive.

In the past, we have had a colony of such bees which were so difficult to handle that we finally smoked them heavily to keep them from getting angry even though they ran all over the hive. The queen of black bees is very small and dark, and is not easily recognized, so it is often necessary to filter the bees through a queen excluder until the queen can be found. The extremely bad tempered colony is of course very undesirable in any apiary, and getting rid of it is not always the easiest thing in the world to do.

PAINTING HIVES

Can I paint hives that have live bees in them.

IOWA.

Answer.—It is quite all right to paint hives that have live bees in them. It is sometimes difficult to paint near the entrance as the bees frequently cluster there. It is best to let this part of the painting go until a time when the bees are not flying regularly. The other parts of the hive may be painted on the stand.

AFTERSWARMS

I bought some new hives last year and can hardly get new swarms to stay in them. Is this because of the wood? Do bees prefer to stay in old hives?

MISSOURI.

Answer.—It apparently makes no difference to the bees whether the hives are new or old. Your difficulty is probably from secondary swarms or "afterswarms." The first swarm that issues from a colony in the spring is headed by the old queen in the colony. The old queen is usually heavy with eggs and is quite satisfied to stay in any hive or box where the swarm is placed. However, a secondary swarm or the swarm that issues next from the colony is usually headed by a young queen. Sometimes this queen has not been mated, and instead of being content to stay in the hive, she immediately takes flight. We have often tried to hive such a swarm, and, after returning them to the hive as many as half a dozen times, could not induce the swarm to stay. Of course, a swarm follows a queen, and, as indicated, if the queen is a young queen, she is less likely to stay, and if she has not been mated, she is nervous and will leave the hive very quickly.

If your hive is clean and has comb foundation or old bee combs in it, there is no reason why a swarm should not stay if it is a primary swarm.

It is best to leave the inside of the hive the natural wood finish without trying to paint it. It is never necessary to paint beehives on the inside.

GNAWING

What is the reason that bees eat wax away from the bottom of frames of foundation or along the wires of wired foundation?

IOWA.

Answer.—The bees eat the wax away from the bottom of the frames of foundation when they are trying to build combs and do not have sufficient wax to do so. This is always at a time when no honey is coming in which they can utilize in the manufacture of the wax they need. Foundation should never be given to bees except during a honey-flow. This is the only time they are able to draw it out satisfactorily.

GRANULATION OF HONEY

I am troubled with my honey going to sugar. Do you know any way to prevent it or any way to make dark honey light?

FLORIDA.

Answer.—We would suggest that you heat the honey to a temperature of 160 degrees. It should be brought up to this temperature as rapidly as possible and then canned while hot and sealed air tight if possible. The granulation will then be very slow to develop in the honey, and we feel sure you will have an opportunity to dispose of it and see it properly consumed before any granulation shows.

The only way to change dark honey into light would be by filtration which is quite a difficult process and one we would not recommend to you.

FULL SHEETS FOR BULK COMB HONEY

In producing chunk honey would it be advisable to use starters or full sheets of foundation?

MISSOURI.

Answer.—In producing chunk honey we are sure that you will find it necessary to use full sheets of foundation. A special cut comb or bulk comb foundation is available and can be found in the bee supply catalogs. It is thinner than brood foundation and heavier than the foundation used in producing section comb honey. Full sheets of foundation should always be used. The narrow starter strips formerly used always produced wavy, undesirable combs.

HONEY FROM VETCH

Do bees produce honey from vetch? How many colonies should be placed to the acre? When does it bloom? Does it pay to move bees to vetch pasture?

ARKANSAS.

Answer.—Vetch seems to be an uncertain plant in honey yields. In some places it yields well and in others the bees do not seem to get much from it. I would be inclined to expect that you probably might get some honey from it in your locality and would suggest that you take advantage of any chance to place a few colonies of bees within reach of it to see what they will do. If it yields well, it will probably provide pasture for from two to ten colonies per acre during the time it is in bloom.

POLLEN CLOGGED COMBS

What is the best way to remove old pollen from brood combs?

ALBERTA.

Answer.—Pollen in combs is usually left for the bees to remove any surplus they may not need. Recent investigations show that a large reserve of pollen in the hive is the best insurance we have for a prosperous colony of bees. Should the pollen become mouldy, the bees will remove it. It requires about fifty pounds of pollen to carry the bees through the normal course of brood rearing for the year and, unless they have a large supply in the fall and early spring, the colonies will not build up rapidly.

CROSS COLONIES

We have nine stands of bees, all fairly strong, but one is a regular spitfire. The queen is very prolific, but her progeny are almost unmanageable, at least by any process I know about. If you know anything other than smoke that will subdue them I would like to know what it is.

FLORIDA.

Answer.—The only way to overcome these occasional wicked colonies is to destroy the old queen and give the colony a new one. The progeny of the new queen will likely be of better temper; and after the bees of the old queen have died, it should be easy to handle the colony. If your colony should be black bees, requeening is pretty difficult. In

MEETINGS AND EVENTS

TELEGRAM

BIG TRI-STATE CHAUTAUQUA MEETING IS SCHEDULED POKAGON STATE PARK ANGOLA, INDIANA, AUGUST 6, 7, AND 8. THIS BEAUTY SPOT IN NORTHEASTERN INDIANA OFFERS SWIMMING, FISHING, BOATING, CAMPING FACILITIES. AN ELABORATE SOCIAL AND EDUCATIONAL PROGRAM BEING PLANNED BY STATE COMMITTEES.

(SIGNED)

PROGRAM COMMITTEE.

Middlesex County, June 28

At its April meeting, Chester A. Robinson, principal, Kendall School, Belmont, was elected secretary-treasurer of the Middlesex County Beekeepers Association of Massachusetts.

This club will meet at the home of Mr. and Mrs. Perley S. Smith, Kensington, New Hampshire, on Saturday, June 28 at 2:30. George A. Meigs from Essex County Agricultural College will speak on "Honey For Health." Hives will be opened, and the ladies auxiliary will serve supper featuring cold meats, salads, rolls and honey, ice cream, honey cakes and coffee. Essex County beekeepers, northern Essex beekeepers and New Hampshire beekeepers are cordially invited with their ladies to this meeting.

A. M. Southwick,
President.

Delta Beekeepers Association

At the regular monthly meeting of the Delta Beekeepers Association held on May 5, 1941 at the Y. M. C. A., Vicksburg, Mississippi, the following officers were unanimously elected: President, Frank Hay, Port Gibson, Mississippi; Vice-president, Sam Wadford, R. F. D., Vicksburg, Mississippi; Secretary, Claude C. Lee, 1315 First North Street, Vicksburg, Mississippi.

Mr. Hay served as vice-president the past year, Mr. Wadford is a new official in the association, and Mr. Lee was reelected as secretary. Other officials and committee chairmen will be named at the next meeting in June. The retiring president is J. D. McCarron, Vicksburg. The retiring officers were given a vote of thanks for the splendid work done during their administration, and full cooperation promised the incoming administration, by members of the association.

Quite a few members attended the meeting. Reports were heard and approved from chairmen of the census, Nursery, Membership and Publicity Committees. Routine business of the association was cared for, then current apiary management was discussed. Hunter McCullum, of The Stover Apiaries, of Port Gibson, Mississippi was present and furnished valuable information to members of the association. We are always pleased to have visitors at our meetings as information is obtained that would not otherwise be made available.

June 15 members will meet at the Y. M. C. A., Vicksburg, Mississippi, leaving at 2:00 p. m. to visit the apiary of Ora Mueller at Tallulah, Louisiana. Demonstrations of some feature of beekeeping are given at each field meet. Transferring from a box hive to standard equipment will be demonstrated on June 15. It is hoped to have a large attendance at this field meeting.

After transacting all business, the meeting was adjourned and the usual round-table discussion was held on subjects of interest to all beekeepers.

Claude C. Lee,
Secretary.

St. Clair County, June 15

The annual picnic meeting of the St. Clair County (Illinois) Beekeepers will be held at Freeberg, June 15, at the home of John Klein. A good program has been planned, and Illinois beekeepers are urged to make a day's outing and attend this important St. Louis area meeting.

Eastern Iowa Meeting

The eastern meeting of the Iowa State Beekeepers Association is under the auspices of the Scott County Beekeepers Association and will be held June 24-25 at Credit Island, on the Mississippi, at Davenport. The complete program is in the making. This will be one of the large meetings of the Eastern Iowa-Western Illinois sections and will include many of the larger beekeepers from other surrounding territories.

Arizona Ladies Auxiliary

The Arizona State Beekeepers Auxiliary is planning a large meeting at Phoenix, on June 21. More than two hundred are expected to attend. Mrs. W. A. Crockett is secretary.

Winnebago County (Wis.)

Kenneth Smith, Neenah, was elected president of the Winnebago County Beekeepers' Association at the annual meeting May 12 at the home of Mr. and Mrs. William Nelson in Oshkosh, Wisconsin. Other officers named are A. I. Bennett, vice-president, and Mrs. I. W. Johnson, secretary-treasurer. The association will also hold its picnic in June at the Nelson home.

H. C. Brunner.

According to Ralph E. Ammon, director of the state department of agriculture, 25 counties in Wisconsin had reported up to April 25 appropriations totaling \$4,000 for bee disease control this year.

H. C. Brunner.

Wisconsin Association Planning Three Summer Meetings

The Wisconsin Beekeepers Association will hold three summer meetings in various districts of the state as follows:

July 22, Southern Wisconsin, place to be announced.

July 23, Northeastern Wisconsin at Pierce Park, Appleton.

July 24, Western District, Wakan-da Park, Menomonie.

At Appleton the forenoon will be spent in inspecting the apiary and extracting equipment of Mr. Cornelius Meyer, and at Menomonie at the apiary of S. P. Elliott. There will be a potluck luncheon at noon followed by an afternoon program of speakers.

These meetings have always been very well attended and an interesting program is assured.

Delaware Meeting, June 7

The Delaware State Beekeepers' will meet on Saturday, June 7, at the apiary of Chas. H. Liedlich on Iron Hill near Newark. President Chas. A. Peet will preside at the meeting. Edwin J. Anderson, specialist in Apiculture, Pennsylvania State College, will be present to lead a discussion of general beekeeping problems and to answer questions. The honeyflow from tulip poplar should be on at this time and the bees ought to be easy to handle if a few hives are opened.

The meeting will begin at 2:15 P. M., D. S. T. and continue until 4:30 P. M. Refreshments have been planned—possibly strawberries and ice cream.

John M. Amos,
Secretary-treasurer.

Bronx County, June 8

The June meeting of the Bronx County (New York) Beekeepers Association will be held at the home

of Sam Semich, 2242 Given Avenue, Bronx, New York City on Sunday, June 8 at 2:30 P. M. There will be interesting discussions and demonstrations in the care and handling of bees at this gathering. A cordial welcome is extended to all neighboring beekeepers to attend. Refreshments will be served after the meeting.

Mr. Harry Newman, the secretary, will be giving a lecture at the Suffern New York Beekeepers on Sunday, June 15 in the afternoon on the subject "Requeening" and etc. We would like to have as many as can make it convenient to attend.

Harry Newman,
Secretary.

Summer Course in Beekeeping

The following entry appears in the Summer Session Bulletin of the University of Illinois:

Entomology S31. Essentials of Beekeeping—Social life, metamorphosis, habits and adaptive structure of the honeybee; practice in seasonal management of bee colonies, including actual care of apiary. Enables teachers to employ the honeybee as illustrative material in biology or nature study courses, or in directing projects of boy scouts, 4-H, and Future Farmer clubs; also provides practical training for beekeeping as a profitable avocation. Either the discussion or the laboratory may be taken separately for one hour of credit. Lab. fee \$1.50 for students registering for the laboratory work.

1 or 2 hours Discussion 3 hours
TT 104 Vivarium Milum

Laboratory 1-3 hours TT 104
Vivarium Milum.

Persons desiring further information about the other courses offered during the Summer Session should address requests for information to the Registrar, University of Illinois, Urbana, Illinois.

Iowa Summer Meeting

The summer meeting of the Iowa Beekeepers Association for the western part of the state will be held this year at the home of Roy Littlefield at Exira, on July 9.

Mr. Littlefield has developed a system of management all his own and his home apiary and honey house will prove of great interest. Speakers for the day are being so arranged that a drive of many miles to hear the program will be repaid. Those wishing to do so may arrange a side trip to Pellett Gardens, about fifteen miles south of Exira, where someone will be available to show the apiary and tests plots after 3:30 in the afternoon.

Glenn O. Jones.

DISEASE CONTROL IN FLORIDA

By R. E. FOSTER*

THE State Plant Board of Florida first undertook eradication or control of the highly infectious disease of bees known as American foulbrood in 1919. It has continued the work energetically ever since. Incidentally, the Plant Board was, as far as known, the first agency to require the destruction of infected colonies by burning as the only adequate means of dealing with the disease. This practice is now almost universally followed and recommended by apiary inspectors throughout the country.

The original intent of the bee disease law was to eradicate the disease American foulbrood and, during the first several years of operation, it looked as though eradication might be achieved. In recent years, however, there has been an alarming increase in the number of colonies found to be infected with this disease. The reason for this increase can be laid directly to the ever increasing practice on the part of non-resident beekeepers of shipping their bees, some of which are infected with American foulbrood, into Florida during the fall and winter after the honeyflow has ceased in their home states. Thus, new infections are being constantly introduced into Florida.

It is a matter of record that last year some seven thousand colonies were moved into Florida from outside points. Forty-nine per cent of the new infections of foulbrood found during the same period were traceable to these importations. In many instances, the Board's apiary inspector did not know of the presence in the state of such imported bees until they are discovered, sometimes accidentally, as the result of intensive inspections following an outbreak of American foulbrood in the area where the bees had been placed.

For example, two years ago a beekeeper brought some bees and secondhand equipment from his home in South Carolina and placed them in the Apalachicola River Swamp. Before the Board's inspector learned of the presence of these bees, American foulbrood had spread to fifteen colonies belonging to the same individual, and to 132 colonies belonging to other beekeepers. Some of the spread was caused by the sale of the secondhand equipment. The resulting loss to apiary owners in that area was two hundred and forty-eight colonies of bees, hundreds of

dollars worth of equipment, and the season's honey crop. The cost to the State Plant Board for eradication and intensive inspections of bees in that area as a result of that infection amounted to approximately fifteen hundred dollars. While exact figures cannot be given, we believe that a conservative estimate of the cost to the Plant Board for inspections and clean-up work in diseased apiaries as a result of the movement of these infected bees into the state last year would be close to three thousand five hundred dollars.

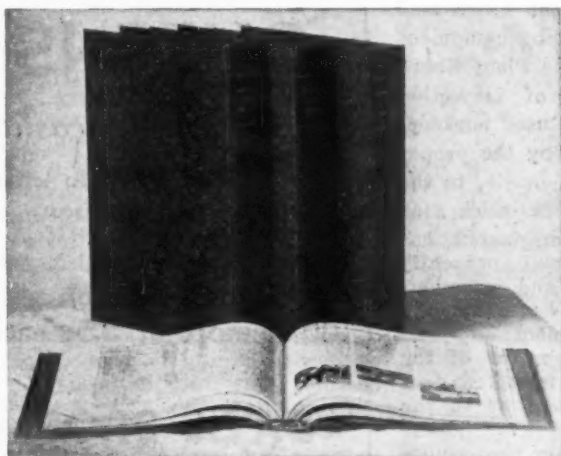
Thus, it is evident that a considerable portion of the time of the Board's apiary inspectors is devoted to cleaning up infections caused by the movement of diseased bees from other states into Florida. In some instances, the infection is confined to the non-resident's bees and, by the time the Board's inspectors have cleaned up the disease for this itinerant he is ready to ship his remaining clean bees back to his home state. In such instances, the state of Florida is simply ridding this itinerant's bees of the disease at its own expense and for his benefit.

After care consideration, the apiary inspector reached the conclusion that this condition could be remedied by a revision of the Board's rule regulating the movement of bees and equipment into the state. The State Plant Board, at its meeting on February 7, 1941, approved of these recommendations, and adopted several new rules; namely, Rules 41 A-1, 41 A-2, and 41 I, which are printed elsewhere in this article. A summary of the requirements of the several rules is given herewith.

Under the provisions of Rule 41 A-1, shipments of bees and used equipment into Florida are prohibited unless accompanied by a valid certificate of inspection to the effect that the apiary in which such bees and equipment originated was inspected and found apparently free from contagious and infectious diseases within a period of sixty days preceding date of shipment.

Rule 41 A-2 requires as a condition of entry into the state that any beekeeper or other person who desires to ship bees or used equipment into Florida shall file with the State Plant Board a valid certificate of inspection, and shall notify the Apiary Inspector of the State Plant Board at least ten days before date of shipment as to the approximate number of hives, honey combs, frames, and other used

*Apiary inspector.



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equipment contained in the shipment, and the destination thereof.

Through the enforcement of these two rules, the State Apiary Inspector will know in advance of the arrival of any bees or used equipment, and will be able to make a prompt inspection immediately upon the arrival of the commodities in Florida. If found moved in violation of the Board's regulations, or if found infected with any contagious and infectious disease, he will be able to safeguard the shipment without delay by the application of the measures provided for in the new Rule 41 I. Under the provisions of this rule, all bees and beekeeping equipment, whether in transit or in the hands of the possessor, may be held for inspection regardless of whether or not they are certified and, if the bees or used equipment are found to have been moved into Florida in violation of the Board's regulations or if found infected with any infectious and contagious disease, the entire shipment must be deported, destroyed, or otherwise treated within twenty-four hours.

It is expected that a rigid enforcement of the provisions of Rule 41 I will, in the future, do away with the practice of the Plant Board's inspectors cleaning up infections in bees belonging to some out-of-state beekeeper.

In discussing Rule 41 I with out-of-state beekeepers, who have been making a practice of moving their bees into Florida for the winter, the Apiary Inspector was surprised to learn that they were in favor of the rule, but rather astonished when they stated that the enforcement of this rule might have a tendency to make their State Apiary Inspectors a little more careful when they inspected bees for certification for movement into Florida.

(Rules and regulations made by State Plant Board pursuant to the Florida Bee Disease Law of 1927).

Movement of Bees and Used Beekeeping Equipment Into Florida

The attention of transportation agents, beekeepers, and others interested is directed to the following rules of the State Plant Board regulating the entry into the state of bees and used beekeeping equipment, adopted February 7, 1941.

These rules provide, among other things, that bees and used beekeeping equipment be properly certified as to freedom from disease; that a copy of such certificate, together with a notification of intention to ship into Florida, be furnished the Board's Apiary Inspector prior to shipment; and for the handling of bees and used equipment shipped in violation of the Board's rules, and of bees found to

be infected upon arrival.

Rule 41 A-1. In accordance with the provisions of Section 1 of Chapter 12,050, as amended by Chapter 19,062, and Section 4 of Chapter 12,050, Laws of Florida, the shipment or movement into this state, from other states and countries, of bees, used or secondhand bee hives, honeycombs, frames, and other beekeeping fixtures, is hereby prohibited except when such shipment is accompanied by a certificate of the State Entomologist, State Apiary Inspector, or corresponding official of the state or country from which said bees or equipment are shipped or moved to the effect that the apiary in which such bee or equipment originated has been inspected and found apparently free from contagious and infectious disease within a period of sixty days preceding date of shipment: Provided, that in the absence of facilities for such inspection and certification, the Plant Commissioner may issue permits for the shipment into this state of such bees or equipment upon the presentation of suitable evidence going to show that such shipments are not likely to convey any contagious or infectious diseases of honeybees, or upon such equipment being properly disinfected.

Rule 41 A-2. Any beekeeper, dealer, person, firm or organization, who desires to ship into this state

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bees, used or secondhand bee hives, honeycombs, frames, and other used or secondhand beekeeping equipment shall file with the State Plant Board an official certificate of inspection covering such bees or used beekeeping equipment signed by the proper official of the state of origin, to the effect that the apiary in which such bees or equipment originated has been inspected and found apparently free from contagious and infectious diseases within a period of sixty days preceding date of shipment; and shall notify the Apiary Inspector of the State Plant Board at least ten days before date of shipment as to the approximate number of hives, honeycombs, frames, and other used equipment contained in the shipment, and the destination thereof.

Rule 41 I. Any and all bees and used beekeeping equipment subject to the provisions of the Florida Bee Disease Law of 1927, whether in transit or in the hands of the possessor, may be held for inspection by an inspector of the State Plant Board, regardless of whether or not they are certified, and if such bees or used beekeeping equipment are found to have been moved or transported into the state in violation of the rules or regulations of the State Plant Board, or if found infected with any contagious or infectious disease, such bees or used beekeeping equipment must be deported, destroyed, or otherwise treated within twenty-four hours upon the order of the State Plant Board.

Wilmon Newell,
Plant Commissioner.

Gainesville, Florida March 19, 1941

TOMATO BUTTER (OR JELLY)

Use 10½ cups of tomatoes after they are prepared in this manner: Scald, skin and remove seeds from tomatoes by slitting pockets and scraping out seeds with fingers. Cook by boiling for 5 minutes. Place in bag, allow to remain until pulp is well drained. Remove pulp from bag and either mash or run through ricer to thoroughly break up the pulp. If pulp is too thick, add just enough juice to bring to proper consistency for cooking. Add ½ teaspoonful salt. Place over low flame. Use wide pan so that evaporation takes place rapidly as possible. Cook until very thick and almost all juice gone. Add 2½ cups of clover honey. Heat thoroughly and then seal in sterilized jars.

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BEEKEEPING IN THIS WAR

The problem [of beekeeping in the defense program] is a difficult one. The situation is so different from that existing during the first World War that it seems to me an entirely new approach is necessary. There appears little likelihood that honey will be in demand to the extent that it was during the first war. Reports indicate an abundance of sugar on hand. I recently read a statement, however, to the effect that inasmuch as 70 per cent of our sugar comes from outside the continental United States, some control of production and distribution might be necessary. Should such be the case, a rise in the price of sugar would be possible, which in turn ought to stimulate a demand for honey. During the first war beekeepers, of course, tried to produce as much honey as possible, but I cannot believe that the same will take place this time.

There is evidence that an artificial stimulation is being given to boost the price of sugar and threats have been heard that the President might suspend quota restrictions which he is empowered to do under the Sugar Control Law to avoid a shortage of sugar. Miss Harriet Elliott, Consumer Commissioner of the NDAC, says, however, that there is no basis for supposing that a sugar shortage could develop and that rumors to that effect are entirely unwarranted.

If honey were to be classified as a non-essential, I doubt that it would seriously affect the honey market and it is too much to hope that honey will ever be placed in the class with wheat, corn, milk, etc.

No one knows apparently just how the non-essentials are going to be affected; but if all industries producing non-essentials have to wait at the foot of the line for materials and supplies, beekeeping would suffer. If a bee supply firm, for instance, were told to manufacture fewer hives and use the lumber to make crates for airplanes, and if it were permitted to use only 50 per cent of its usual consumption of beeswax, the beekeeping industry would suffer. If restrictions were to be placed on the manufacture of bee supplies and prices advanced materially without a corresponding increase in the price of honey, beekeepers would feel it and become discouraged. Discouraged beekeepers mean fewer bees for pollination and fewer bees for pollination will put crimps in the production of many seed, fruit and forage crops, adding further to the aggravated lot of the farmer. Apparently there are surpluses of almost all kinds of agricultural products, notwithstanding,

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One thousand colonies to draw from, experienced men to do the work. Men who own and operate bees in Michigan and know what is required on the receiving end. We have been continuous advertisers and shippers since 1914. Write for prices on Italian bees and queens, you will be surprised.

	Queens	2-lb. pkg. & queen	3-lb. pkg. & queen
1 to 12	40c	\$1.55	\$2.15
13 to 25	35c	1.40	1.95
26 to 100	30c	1.25	1.75

N. FOREHAND FLORALA, ALA.

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1-11	1.40	1.95	2.50	3.05	.55
12-23	1.30	1.80	2.30	2.80	.50
24-49	1.20	1.65	2.10	2.55	.45
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	1-9	10-49	50 and over
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5 to 25	2.10	2.75
25 or more	1.80	2.35

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2% discount for cash in full with order.

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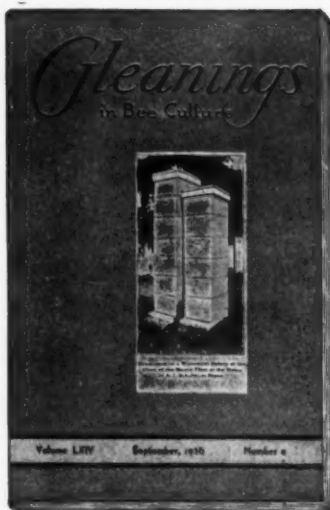
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WANTED Thousands of Rabbits and other Small Stock, Poultry and Birds, Let

"STANDARD RABBIT & PET JOURNAL"

Bring you the Monthly News of Rabbit, Cavy, Small Stock, Poultry, Birds and other Pets.

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Special Year 50c; 3 Years \$1. Sample, Dime.

The BEST PACKAGE

to be had. About 75% baby bees, 25% teachers.

A good Italian queen raised right.

We try to make you money.

The VICTOR APIARIES, Shepherd, Texas

THREE-BANDED

Italian Bees and Queens

2-lb. Packages with queen **\$1.50**

3-lb. Packages with queen **\$1.90**

Queens, each **.30**

We guarantee safe arrival, full weight pkgs. of young bees, young queens, shipped on date specified and no disease.

MAYEUX BEE FARM :: HAMBURG, LA.

Better Bred Queens ♦ Three-Banded Italians

We are sure you know, but let us remind you how essential a good young queen is in your colonies. Our Better Bred Stock is as good as money can buy.

Queens 35c each, 3 for \$1.00

2-Lb. packages with queen **\$1.50**

3-Lb. packages with queen **\$2.00**

CALVERT APIARIES

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CALVERT, ALABAMA

BLUE RIBBON

PACKAGE BEES

"BEST IN THE WEST"

THOS. C. BURLISON, COLUSA, CALIF.

the authorities estimate that the United States will have to feed Europe at the termination of the war if not sooner, and so it is not conceivable that farmers will be encouraged to produce less. The part of the beekeeper in this war, it seems to me, is to back up agriculture.

Jas. I. Hambleton, In Charge
Div. of Bee Culture U. S.
Department of Agriculture.

W. S. CORBUT

Death came suddenly recently to W. S. Corbut, 55, long-time resident of Montrose, Colorado, when he suffered a heart attack at his home. He came to Montrose with his parents from Nebraska when 10 or 11 years of age before there were any roads over the Blue mesa. He started work in the bee business with his father, J. J. Corbut, who died in Montrose about 12 years ago.

During the past 25 years, he was in commercial beekeeping.

IOWA SPRING RADIO DISCUSSION

The spring series of radio discussions for the honey producers of Iowa began Monday, March 31, and will continue throughout June, over WOI each morning at 6:30 as a part of the Farm Facts program. The material offers fundamental facts of bee behavior and from these develop the colony problems of management.

CANDIED HONEY— Nature's Best Honey Spread

Honey Acres, Menomonee Falls, Wisconsin sponsors a new product called "Candied Honey—Nature's Best Spread." Best quality white honey is utilized.

Melvin News Service,
Fond Du Lac, Wisconsin.

GOOD NEIGHBORS

(Continued from page 272)

his case it was much worse because he had his fire the day after he began putting his supers on his hives. If the beekeepers would just let this be a warning to them because fire may come to anybody, it will save such a dilemma.

I am glad I am associated with beekeepers. One gets very mad at beekeepers at times when they move a

yard too close to him, or when they sell their honey for less money, but when you see all of them take time off right in the midst of their busy season to help a fellow beekeeper who is in trouble it makes one proud to know he is a beekeeper and that he is associated with such loyal friends.

Jere Frazer.

SOUTHERN VISIT

(Continued from page 269)

We are well aware that the South produces most of the honey it consumes. Favorable areas along the coasts, around the swamps, and in the unspoiled timber lands support many commercial beekeepers. We saw a group of package bee shippers who necessarily sacrifice honey production because they must constantly drain their colonies of bees until the package season is over, when it is too late to count on anything more than a build-up for winter of both bees and stores.

When we left the South in late April, breeders were in feverish anxiety, because colonies had been slow to build to strength. It is relatively easy for a factory to budget its output, and to accept orders to that extent. Barring fire or strike, orders will come through. But the southern shipper of package bees has to contend with the weather. Prolonged cool weather holds back brood rearing and prevents pollen gathering, which greatly affect colony build-up. This has been the case in early 1941. Ordinarily breeders worry more about getting mated queens in time. This year, the queens were available early enough, but the bees strengthened slowly. If you pull a colony for package bees before it gets up to strength, you not only get relatively few bees, but you deter its build-up for later pulling. It is a vicious circle. Happy is the shipper who has his colonies at full strength when the shipping season begins, with plenty of bees for his orders and plenty of orders for his bees.

We arrived home to see for the second time the fruit trees in full blossom and the trees in new leaf, in time to help plant garden. Truly, the life of a nomad must be fascinating. But it is nice to have a home to come back to.

In subsequent articles I will discuss phases of the package bee and queen business, reflected by our 1941 trip. I hope that they will reflect, in general, similar conditions among other shippers in other sections, from the Carolinas and Florida to California, whom we hope to visit as time goes on.

Moore's Strain

LEATHER COLORED ITALIAN
QUEENS—SUPERIOR STOCK

50c each

World-wide reputation for honey-gathering, hardiness, gentleness, etc., since 1879. Safe arrival and satisfaction guaranteed.

Circular Free

J. P. MOORE

Route 3 FALMOUTH, KY.
Former Address, Morgan, Kentucky, U.S.A.

THRIFTY BEES

Untested queens — 40c each.
100 for — \$35.00
2-lb. combless packages with
untested queens — \$1.40 each
12 or more — 1.30 each
3-lb. combless packages with
untested queens — \$1.80 each
12 or more — 1.70 each

We can make Prompt Shipment.

We guarantee full weight packages, safe arrival and satisfaction.

Forty-nine years' experience assures you of the finest THRIFTY three-banded Italian stock.

W. J. FOREHAND & SONS

Fort Deposit, Alabama
Breeders Since 1892

Fine Young Italian QUEENS

from our selected northern stock. Queens reared under ideal conditions.

Unlimited supply—Queens 50c each. Write for discount on large orders

Lawrence Pritchard,
Queen Breeder

YOU MUST BE SATISFIED
PRITCHARD APIARIES, SYLVESTER, GA.

Mott's Northern Bred Italians

Loose queen bee packages, 2 lb. \$1.00
3 lb. \$2.40. Mott's strain in the south.
Northern bred queens, \$1.00; 2 or more,
75c each. Guaranteed purely mated or replaced. Virgins (day old queens) 3 for \$1.00. Breeders, \$3.00, \$5.00, \$10.00. Satisfaction guaranteed. U. S. A. VALUE.

E. E. MOTT :: GLENWOOD, MICH.

QUALITY THREE-BANDED ITALIAN BEES and QUEENS

Highest Quality, Young Bees, Good Workers, Large Capacity

Prices after June 1st

2-lb. pkg. with queen — \$1.35
3-lb. pkg. with queen — 1.70
Live delivery, prompt service and satisfaction guaranteed.

W. O. GIBBS :: WILLACOCHEE, GEORGIA

Italians**Daughters of Stock Bred
For Disease Resistance****Caucasians**

All three races bred in separate yards. Over 25 years a shipper. If you are bothered with Foulbrood try some of our daughters of stock bred for disease resistance. Several large beekeepers that tried some last year are requeening this year with them.

Queens . . . 40c each.

2-Lb. pkg. with queen \$2.25 :: 3-lb. pkg. with queen \$2.95

Send us your rush order. Paying 30c a pound for beeswax in exchange for bees and queens, ship wax direct to Dadant & Sons, Hamilton, Ill., and write us about it. We do lots of trading what have you? Truckers headquarters.

Blue Bonnet Apiaries, R. 1, Box 70, Mercedes, Texas

Package BEES & QUEENS, Bright 3-Band Italian

Our breeding stock is reared and wintered in Michigan.

2-lb. loose queen package	\$1.75
With caged queen	1.60
3-lb. loose queen package	2.15
With caged queen	2.00
Queens	.40

TAYLOR APIARIES, Box 243, LUVERNE, ALA.

AMERICAN RABBIT JOURNAL

. . . Shows the Way to Success

Gives the latest news and views of the rabbit world—an illustrated monthly magazine of general and educational features. One year \$1.00; three years, \$2.00; sample 15c.

AMERICAN RABBIT JOURNAL
Dept. S. Warrenton, Missouri**"She-Suits-Me" QUEENS**

Most excellent strain, three-banded stock. One queen 75c, 3 for \$2.00. Stamps taken for single queen. Koolairy veil \$1.50 postpaid. SAFIN cage 15c, ten for \$1.00.

ALLEN LATHAM : NORWICH TOWN, CONN.

HELLO FOLKS!

HERE WE ARE AGAIN

STEVENSON'S LINE-BRED GOLDENS

If you try us we're sure you'll like us for we are really GOOD.
2-lb. pkg. with queen \$1.85. 3-lb. \$2.45
Queens 50c; Tested \$1.00.

Write to
STEVENSON'S APIARIES, : WESTWEGO, LA.
for descriptive circular.**QUEENS QUEENS**

Fancy Golden Italians, Caucasians and the famous old Leather Backed Italians, all reared in separate yards
50c each

GUILFORD APIARIES, Guilford College, N. C.

GENUINE ITALIAN**PACKAGE BEES AND QUEENS**

On The Same Old Basis — QUALITY — SERVICE — SATISFACTION

2-lbs. Bees, one Standard comb with Queen	\$2.25	Additional pound of bees or comb	\$.40
2-lbs. Bees, one Modified Dadant comb with Queen	2.45	Queens, each	.35
2-lbs. Bees with Queen [combless]	1.50		

E. J. BORDELON APIARIES :: Box 33 :: MOREAUVILLE, LA.

Low Prices for 1941

work your wax into comb foundation. This means quite a savings to you. We are always buying beeswax, also extracted or comb honey. Write us . . .

on the finest bee supplies and foundation made. Send for our price list. Ship us your old combs and cappings for rendering into wax. Let us

THE FRED W. MUTH CO., 229 Walnut St., CINCINNATI, OHIO



KELLEY—"The Bee Man"

RUSH!

We have carloads of supplies packed and ready to go and will ship your order same day as received.

The WALTER T. KELLEY CO., :: PADUCAH, KY.

JUST ACROSS THE OHIO RIVER FROM ILLINOIS

JENSEN'S "Magnolia State" Strain Three-Banded Italians Deliver the Goods

Queens Bred Primarily for High Production of Honey.

They transmit the other most essential qualities to their off-spring; Gentleness, Hardiness, and Uniformity. Pure Mating Guaranteed.

A New York customer writes: "In spite of a very hard winter here in the North, your bees have wintered very good for me, with a loss of about 5 per cent."

An Ontario customer writes: "The package bees I got from you last year did very good. Of the sixty packages received, I had sixty queens laying in a week's time. Enclosed is my order for fifty more."

An Idaho customer writes: "Can you ship me fifty untested three banded Italian queens on April 26th? These queens must be of your own breeding and stock only; no substitutes."

June 1st thru		
Summer Prices—	1-12	-----\$.50 each
	13-50	----- .45 each
	51-100	----- .40 each
	101-1000	----- .35 each

Select tested, best from our annual re-queening, 50c each while they last. Orders filled in rotation.

JENSEN APIARIES

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MACON, MISS., U. S. A.

Our slogan: "There is no substitute for quality."



KELLEY—"The Bee Man"

QUEENS

from Our Louisiana Bee Farm

35c each or 3 for \$1.00

Queens shipped daily from Paducah.

THE WALTER T. KELLEY CO.

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PADUCAH, KENTUCKY

JUST ACROSS THE OHIO RIVER FROM ILLINOIS



QUEEN 30c
Each, Postpaid

2-lb. pkg. with queen
\$1.45 ea.
Express Collect

3-lb. pkg. with queen
\$1.95 ea.
Express Collect

QUEENS \$28.00
Per hundred



Orders shipped the same day received. We guarantee our bees and queens to give you satisfaction in every way or money back.

GULF COAST BEE CO.

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SCHRIEVER, LOUISIANA

QUEENS . Garon's Progeny-Test Three-Banded Italians.

QUEENS . Garon's Daughters of Stock Bred for Resistance to A. F. B.

Deal where best quality is always assured. Where every effort is made to improve our stock and Better Service a by-word.

Get ready for increase demand for honey with bees that will get you the maximum crop.

GARON BEE COMPANY, Donaldsonville, La., U. S. A.

PRICES INCLUDING QUEENS

	2-lb. pkg.	3-lb. pkg.	Queens
1 to 25	\$1.75	\$2.10	40c
26 up	1.70	2.00	35c



*"Out of the picture, Queenie!
We're shooting those nice
looking Continental Cans!"*

EVEN the bees go for Continental's line of honey cans and pails!

Bright, tight, and clean, Continental cans and pails do a lot to help sell your honey. What's more, they're your assurance of complete protection.

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Complete information is also "yours for the asking" at any of our offices.

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CROP AND MARKET REPORT

Compiled by M. G. DADANT

For the June Crop and Market Page the following questions were asked of reporters:

1. What is condition of bees?
2. Condition of honey plants?
3. How is crop compared to 1940?
4. Much honey on hand?
5. Have jobbing prices on honey stiffened?

Condition of Bees

With the exception of some parts of Maine, we can pretty clearly report that condition of bees throughout all the northern areas of the United States and the northern Atlantic coast states are at least normal and, in many cases, 125 to 150 per cent of normal at the date this is written—May 20.

North Carolina does not seem as good as last year and in Georgia conditions are far below last year's. Florida is about normal.

The southern states had continued cold weather, which delayed the progress of the bees; but by May 15 they had picked up to normal conditions and in some cases are above.

In the intermountain territory bees are approximately at normal conditions; whereas on the Pacific coast and in Arizona and New Mexico conditions are above normal.

Honey Plants

We believe honey plants are in approximately the same condition as the bees reported above. The entire northern sections seem to indicate that honey plants are at least normal and in many cases 125 per cent of normal. This would set them far ahead of last year and prospects look rosy.

North Carolina and Georgia have been sufferers due to backsets of bad weather.

The intermountain sections look as normal, with probably better prospects for sufficient irrigation water during the year, and this applies particularly to Arizona where much more than normal water has been stored.

On the Pacific coast from Washington to lower California conditions are normal or above.

Crop Compared to 1940

Naturally, in the northern areas, there has been no surplus crop. However, the build-up crops have been of usual proportion except perhaps in some central western areas the dandelion has not been as plentiful as in previous years.

Florida, South Carolina, Virginia, and Maryland report a normal crop so far. North Carolina seems to be only about 80 per cent of last year, and Georgia is far below last year. There are some very discouraging reports coming in from Georgia.

The southern states have lately been having good flows probably up to normal proportions and this applies, as far as Texas, where, however, the earlier flows have not been quiet as good as had been anticipated.

New Mexico and Arizona are having better flows than last year, and Arizona reports a low grade of honey.

It is in California, that the disappointment has come. With honey plants and bee conditions excellent earlier and ample rain, it looked like big prospects for a crop.

However, the bad weather continued through the orange flow and the orange crop is much less than last year. In fact, taking the state as a whole, probably not over 50 per cent of the honey has been harvested there that was gotten at this time last year.

There is one possibility, however, and that is the heavy rains in the arid district have made prospects for later flows in California even better than a year ago and there may be considerable pick-up and eventually as much honey as last year before the season is over. In some sections bees are starving.

Honey on Hand

There is not going to be any large amount of honey on hand this year. In fact, we might say that the entire carryover and entire 1940 crop has been sold clear out as far as the intermountain territory. Colorado, Utah, and Nevada do report some honey on hand but of not serious proportions and there is some left from the 1940 crop in California and Arizona. All of this honey, however, ranks from light amber to amber, and we know of no honey of a white grade remaining. The clean-up has been very satisfactory.

Is Jobbing Price Stiffening?

Here our reporters are undecided. It is apparent that such honey as is being bought now is being bought for immediate use and, therefore, where it becomes necessary to pay extra price from the producer who has held, such price is being offered. However, where the beekeeper is offering honey on the market, he is not being quoted any higher price than has been prevalent during the past year.

The amber grades have had very little stiffening in price. The white grades have gone up to the extent that the buyer needed honey and the producer insisted on getting the price he had asked for. We learn of new orange honey selling at 6 cents and some cars of sweet clover and alfalfa at 5 cents to 5 1/2 cents f. o. b. shipping point.

Summary

All in all, conditions of honey plants and bees are far above a year ago, with a tendency to dryness throughout a strip of the north central states extending from Nebraska through Central Illinois, Indiana and into New York and New England. However, this condition is not yet critical.

Bees coming strong so early, there has been a tendency for starvation and a necessity for feeding in many instances.

Relative to future honey prices, one thing has struck us and that is that honey producers have written in that the price is going to depend entirely upon the attitude of the beekeeper. Naturally the packer is going to buy as cheaply as he can and one purchase may have a tendency to set the price for the season. The opinion of two or three packers as well as several of our reporters is that the beekeeper himself will largely determine what his price is going to be this year and that there should be a decided stiffening in price connected with the advance in other articles in agricultural lines.

The writer personally believes that we should see no more four cent or 4 1/2 cent honey of white grade but that the price should range from 5 cents upwards.

WANTED--Extracted Honey All Varieties
Send samples and delivered prices to
JEWETT & SHERMAN COMPANY
Cleveland, Kansas City and Brooklyn.

HONEY WANTED Cars and less than cars
Mail Samples
C. W. AEPLER CO., Oconomowoc, Wisconsin

EXTRACTED HONEY Bought and Sold
Iverson Honey Company
201 North Wells St., Chicago
Reference: First National Bank of Chicago

THE MARKET PLACE

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GOOD PACKAGE BEES AND QUEENS for 1941. We have supplied leading beekeepers for many years and of late years have not found it necessary to advertise a whole lot even though we have one of the largest, best equipped queen and package establishments in the South. If you want the utmost satisfaction from your packages and queens write me. Three banded Italians only. No disease. H. C. Short, Fitzpatrick, Alabama.

OVERWEIGHT PACKAGES and young queens at a price you can afford to pay. I can fill your early orders. D. P. Green, Deland, Fla.

THREE BANDED Italian bees and queens. Extra good honey gatherers and gentle to handle. Satisfaction guaranteed. Alambance Bee Company, Graham, North Carolina.

ONE 75c three band Italian Queen free to every new customer. L. H. Wagoner, Elon College, N. C.

EXTRA YELLOW Italian queens that produce bees a little more yellow than three-banded; more gentle and just as good workers. Untested, 50c each. Health certificate and satisfaction. Hazel V. Bonkemeyer, Randleman, N. C., Rt. 2.

GOLDEN QUEENS, excellent quality. Hardy, gentle, productive. Health certificate, satisfaction guaranteed 50c. O. E. Brown, Rt. 1, Asheboro, North Carolina.

GOLDEN ITALIAN bees and queens. Select untested, 50c each, any number. Carolina Bee Farm, Graham, N. C.

QUEENS and three frame nukes. Bred and selected by New Jersey Agricultural Experiment Station for seventeen years. No bees better. Queens 75c each. \$8.00 the dozen. Larger quantities subject to correspondence. Three frame nukes with queen \$3.15 at the apary. Bring your hives and get 'em. E. G. Carr, Pennington, N. J.

PURE ITALIAN queens 50c; tested \$1.00. Geo. H. Williams, Rt. 5, Reidsville, N. C.

REDUCED PRICES on Caucasian package bees. 2-pound package bees with queen \$1.50; 3-pound package with queen \$2.00. Queens 40c each. Full weight, safe arrival and satisfaction guaranteed. P. B. Skinner Bee Co., Greenville, Ala.

MACK'S QUEENS (They speak for themselves). Hardy northern bred Italians fully guaranteed. Over 25 years as a breeder back of their superior qualities. 50c each; 10 or more, 40c each. Herman McConnell, Robinson, Illinois.

NORTHERN BRED leather colored Italian Queens 35c; 3 for \$1.00, in adjustable introducing cage. We co-operate with good honey producers in the selection of our breeding queens and believe our stock to be as good as you can buy. Diemer Bee Co., Liberty, Missouri.

CARNIOLANS and CAUCASIANS—2-lb. pkg. \$1.50 each; 3-lb. pkg. \$2.00 each. Untested queens 40c each; 50 to 100, 35c each. We give good bees, good queens. Prompt service. Tillery Brothers, Greenville, Ala.

HONEY FOR SALE

CHOICE EXTRACTED CLOVER HONEY in 60's. R. C. Bish, Successor to Moore Apiaries, Tiffin, Ohio.

FANCY TUPELO HONEY for sale, barrels and 60's. Marks Tupelo Honey Co., Apalachicola, Florida.

FOR SALE—Fancy Iowa white clover extracted honey. Kalona Honey Co., Kalona, Iowa.

ORANGE, Palmetto and Mangrove honey in new sixties. Peter W. Sowinski, Fort Pierce, Florida.

Copy for this department must reach us not later than the fifteenth of each month preceding date of issue. If intended for classified department, it should be so stated when advertisement is sent.

Rates of advertising in this classified department are seven cents per word, including name and address. Minimum ad, ten words.

As a measure of precaution to our readers we require reference of all new advertisers. To save time, please send the name of your bank and other reference with your copy.

Advertisers offering used equipment or bees on combs must guarantee them free from disease, or state exact condition, or furnish certificate of inspection from authorized inspectors. Conditions should be stated to insure that buyer is fully informed.

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COMPLETE LINE comb and bottled honey. Pure clover. Also packed in 5's and 60's. Central Ohio Apiaries, Inc., Millersport, Ohio.

CHOICE Michigan Clover Honey. New 60's. David Running, Fillon, Michigan.

FOR SALE—Northern white extracted and comb honey. M. W. Cousineau, Moorhead, Minn.

WHITE CLOVER extracted 7c. Light amber 6c. Amber or buckwheat 5½c. C. B. Howard, Geneva, N. Y.

IOWA white extracted honey in new sixties. One can or a carload. Satisfaction guaranteed and the price is right. Sample ten cents. Harry C. Kirk, Armstrong, Iowa.

WE BUY AND SELL ALL KINDS COMB AND EXTRACTED CARLOADS AND LESS. H. BLITZ, P. O. BOX 3452, PHILADELPHIA, PA.

HONEY FOR SALE—All kinds, any quantity. H. & S. Honey and Wax Company, Inc., 265-267 Greenwich Street, New York.

NEW COMB AND EXTRACTED in season. H. G. Quirin, Bellevue, Ohio.

HONEY PACKERS—Write us for prices on carload lots of California and Western Honey. We stock all varieties. HAMILTON & COMPANY, 1360 Produce Street, Los Angeles, California.

HONEY FOR SALE—Any quantity, all varieties. B-Z-B Honey Company, Alhambra, California.

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ALL GRADES extracted honey wanted. Bee supplies and honey containers for sale. Prairie View Honey Co., 12243 13th Street, Detroit, Michigan.

WANTED—Chunk comb and extracted honey. For sale good used 60 lb. cans. Clover Bloom Honey Co., Oklahoma City, Okla.

CASH FOR YOUR WAX the day received. Write for quotations and shipping tags. Walter Kelley Co., Paducah, Kentucky.

WANTED—Large quantities of chunk comb in shallow frames; also section honey. Central Ohio Apiaries, Inc., Millersport, Ohio.

WANTED—Carlots honey; also beeswax, any quantity. Mail samples, state quantity and price. Bryant & Cookinham, Inc., Los Angeles, California.

WANTED—Buckwheat honey. Any quantity. Max Ams, Inc., Greenwich Street, New York City.

CASH for all kinds of honey and wax. Especially interested in amber and light amber. Dillon & Sons, Adrian, Michigan.

FOR SALE

FOR SALE—We are constantly accumulating bee supplies slightly shopworn; odd sized, surpluses, etc., which we desire to dispose of and on which we can quote you bargain prices. Write for complete list of our bargain material. We can save you money on items you may desire from it. Dadant & Sons, Hamilton, Illinois.

FOR SALE—We accumulate bee supplies at our warehouses, slightly shopworn and fully serviceable, but discontinued for lack of sale. Write for complete bargain list. G. B. Lewis Company, Watertown, Wisconsin.

CONTAINERS—All kinds and sizes—rock-bottom prices—Complete line Owens-Illinois glassware—6-gallon cans, Dillon & Sons, Adrian, Michigan.

COMB HONEY SECTIONS, good quality, \$7.50 per thousand. Postage collect. Samples 15c. Harold M. Case, Pierpont, Ohio.

SUPPLIES

THE ONLY COMPLETE LINE of wax rendering equipment ever offered—the "Perfection" line. A size and type suitable for every commercial beekeeper. Write for descriptive circular. Robinson's Wax Works, Mayville, N. Y.

COMB FOUNDATION at money-saving prices. Plain, wired, and thin section. Wax worked at lowest rate. Combs and cappings rendered. Robinson's Wax Works, Mayville, N. Y.

CUT COMB HONEY cartons and equipment. Get our prices on everything for cut comb honey. James Hilbert, Traverse City, Mich.

DIFFERENT, that's all. Written and published for the instruction of beekeepers. 52 pages of breezy entertaining beekeeping comment each month. One year, \$1.00; two years, \$1.50. Sample, 3c stamp. Beekeepers Item, San Antonio, Texas.

LARGE CASH SAVINGS can be made by letting us work your wax into either wired or plain foundation. Large independent factory manufacturing a complete line of bee supplies including extractors, etc. Selling direct saves you the agent's profit. Quick shipment from large stock. Large free catalogue explains everything. Walter T. Kelley Co., Paducah, Kentucky.

PORTER BEE ESCAPES are fast, reliable, labor savers. R. & E. C. Porter, Lewis-town, Illinois.

WAX WORKED into medium brood foundation for 15c pound, 100 pounds \$10.00; thin super 22c. Medium brood foundation, 10 lbs. \$4.50. Fred Peterson, Alden, Iowa.

WRITE FOR CATALOGUE. Quality bee supplies at factory store prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries, Manufacturers of Bee Supplies, Onsted, Michigan.

CIDER MILLS

CIDER TIME. Free, How to keep cider sweet, make vinegar quickly, money from cull apples. Presses, Graters, Filters, Supplies. Honey and sweet cider make an excellent roadside combination. PALMER BROS., COS COB, CONN.

POSITIONS AND HELP WANTED

WANTED—Experienced beekeeper at once. Outside draft. Fred D. Lamkin, Union Springs, N. Y.

WANTED—Experienced man at once for remainder of season. Give full details and wages expected. R. E. Ressler, Willmar, Minnesota.

WANTED—Helper to work bees. Must be able to drive truck. No alcoholics or smokers need apply. Paul Wilson, Westwood, California.

EXPERIENCED young apiarist looking for work to put himself through college. Write for references. J. Sloan, 362 Laurel Avenue, Highland Park, Illinois.

WANTED—Beeman with 100 or 300 colonies bees or stands. Minnesota's best bee location, sweet clover. Northern Raccoon Farm, Fairfax, Minnesota.

WANTED—Experienced beeman for about 6 month's work. State age, experience and salary wanted. Room and board furnished. Located near Milwaukee. John Kneser, Rt. 1, Hales Corner, Wisconsin.

POULTRY

DEPENDABLE CHICKS, \$3.95 Per Hundred up. Twenty breeds. Oldest Illinois-U. S. Approved hatchery, known for fair dealing. Chestnut Hatchery, Box 48, Chestnut, Illinois.

MISCELLANEOUS

MICHIGAN BEEKEEPER. Nation-wide circulation. Published monthly. 75c a year. **MICHIGAN BEEKEEPER**, Rt. 3, Lansing, Michigan.

THE BEE WORLD—The leading bee journal in Great Britain and the only international bee review in existence. Specializes in the world's news in both science and practice of apiculture. Specimen copy, post free. 12 cents, stamps. Membership of the Club, including subscription to the paper 10/6. The Apis Club, The Way's End, Foxton Royston, Herts, England.

POLLINATION SERVICE

For the benefits of orchardists, the University of Illinois Extension Service in Agriculture and Home Economics, Urbana, issued this spring a circular entitled "Bees Needed for Pollination," by V. G. Milum, R. L. McMunn and V. W. Kelley. This circular, presented on mimeographed sheets, outlines the availability of bees for orchardists, some factors affecting bee flight, placing and handling colonies in the orchard, bouqueting solid blocks of self unfruitful varieties in order to secure the best pollination, and follow up with how to proceed in renting bees.

The 1941 pollination season is now past, but this circular can well be consulted by orchardists in future seasons.

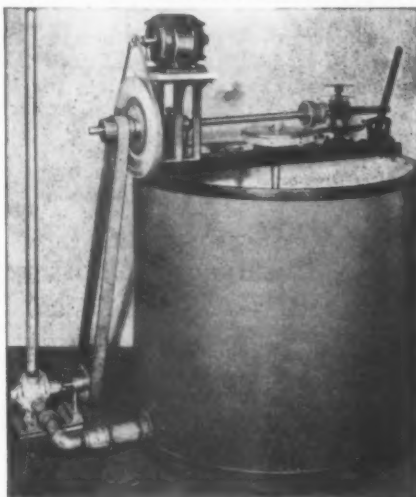
FIRE DESTROYS BEES

Twenty hives of bees were destroyed by fire March 26 at the Heideman Apiary, Waupun, Wisconsin. The hives were ignited by sparks from burning refuse nearby and only prompt action by the fire department prevented a larger loss.

H. C. Brunner.

WOODMAN'S RADIAL EXTRACTORS

BEST IN THE WORLD



A leading honey producer—dealer writes "Woodman's Radials are the Best in the World. Pride of Ownership, is a strong factor in their sale."

Another letter has just been received which reads: "I received the pop-valve and it is just what we want and works fine. We have taken out about 24 bbls. of honey with our New 50 Frame Woodman Extractor. It works fine and is wonderful in its performance."—Tallahassee, Fla., May 5th, 1941. E. J. Langston.

Manufacturers of all equipment for little or big honey extracting and handling.

Send for printed matter

A. G. WOODMAN CO., Grand Rapids, Michigan

Three-Band Leather Colored ITALIAN QUEENS

Select Untested Queens 40c each. Lots of 10, 35c each.
100 or more \$32.00 per 100

Prompt shipment and satisfaction guaranteed

THE CROWVILLE APIARIES, WINNSBORO, LA.

J. J. SCOTT, Proprietor

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St. Romain's "Honey Girl" Italians

HARDY—LONG LIVED—UNSURPASSED HONEY PRODUCERS
Combless

2-lbs. bees and queen	-----	\$1.50
3-lbs. bees and queen	-----	1.95
4-lbs. bees and queen	-----	2.40

1 to 3 40c ea. 4 or more 35c ea.

With a standard brood comb

2-lbs. bees and queen	-----	\$1.70
3-lbs. bees and queen	-----	2.15
4-lbs. bees and queen	-----	2.60
Additional comb of brood	-----	.50

With Modified Dadant brood comb

2-lbs. bees and queen	-----	\$2.00
3-lbs. bees and queen	-----	2.50
4-lbs. bees and queen	-----	3.00
Additional comb of brood	-----	.75

Queens shipped parcel post prepaid; Packages by express carrying charges collect. Rush delivery. No disease. Safe arrival guaranteed.

St. Romain's "Honey Girl" Apiaries ♦ Moreauville, La.
(Former Post Office Address—Hamburg, La.)

IMMEDIATE SHIPMENT

Italian Queens and Bees that Live and Pay.

2-lb package bees with queen	-----	\$1.75
3-lb. package bees with queen	-----	2.20
Untested Queens	-----	.40

USUAL DISCOUNTS.

CITRONELLE BEE CO.

CITRONELLE, ALA.

SUMMER SALE

We feel that you should fill your empty hives with bees now as the prices must be higher another season, let MERRILL'S QUALITY BEES and QUEENS do the work for you as they have stood the test for 30 years and will do a good job for you.

2-Lb. Packages with queens \$1.50 any number
3-Lb. Packages with queens 2.00 any number
Untested queens 35c or 3 for \$1.00

Good Italian stock and prompt service

Merrill Bee Company ♦ Bucatunna, Mississippi
MISSISSIPPI'S OLDEST SHIPPERS

Select Italian Queens 35c each

Package bees at \$1.50 for 2 pounds and queen.

Each additional pound 45 cents

My bees are light in color and gentle to handle.
Health certificate with each shipment.

PLAUCHE BEE FARM :: Hamburg, La.

IT PAYS TO REQUEEN

Three-Band Italians Lead the Field.

1 to 25, 50c; 25 to 100, 45c; 100 up 40c.

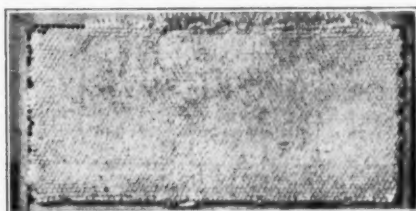
J. M. Cutts & Sons R. 1, Montgomery, Ala.

QUEENS

Now available from tested mothers of stock bred for disease resistance. Order immediately for prompt delivery.

FOR MEMBERS		PRICES	FOR NON-MEMBERS	
1 to 9 queens	\$.85 ea. prepaid	1 to 4 queens \$1.10 ea. prepaid
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25 and up queens75 ea. prepaid	10 to 24 queens80 ea. prepaid
Membership dues	\$1.00 per year		25 and 7075 ea. prepaid

IOWA BEEKEEPERS' ASSOCIATION, State House, Des Moines, Iowa



YOU owe it to yourself to try our unsurpassed strain of hardy, prolific Italians obtained thru years of scientific experiments.

2-lbs. Bees and Queen (combless) . . . \$1.50
2-lbs. Bees and Queen (on 1 standard comb) 1.95
additional pound of bees 45c Queens 3 for \$1.00

Quality :: Satisfaction :: Health Certificate.

B. J. BORDELON MOREAUVILLE, LOUISIANA

Mountain Gray Queens

For June and Later

Good, young, well-bred Grey Queens fresh from our mating yards to you for **50c ea.**

Gray bees are the gentlest. Gray bees have the longest tongues and rank with the best in honey gathering. No disease.

BOLLING BEE CO., BOLLING, ALA.

Italian Strain BEES & QUEENS

Service and Quality Guaranteed.

Queens, each 40c or 3 for \$1.00

2-lb. package with queen 1.35

3-lb. package with queen 1.75

No discount.

Shipping point, Epes, Alabama.

LITTLE BROS. :: Sumterville, Ala.

QUALITY ITALIAN BEES and QUEENS

2-lb. pkg. with queen \$1.75

3-lb. pkg. with queen 2.20

Untested Queens, each .40

B. A. ANDERSON :: OPP, ALABAMA

PACKAGE BEES and QUEENS

Three-Banded Italians

We can fill your order promptly. Prices as follows:

1 to 4—2-lb. Packages . . \$1.50

5 to 9—2-lb. Packages . . 1.45

10 and up—2-lb. Packages . 1.40

For 3 lb. packages, add 40c.

Queens 35c each, or 3 for \$1.00

DUPUIS APIARIES

Box 152 Breaux Bridge, La.

FOR SALE ITALIAN BEES AND QUEENS

Nothing But The Best

Bright Yellow and Three-Band

QUEENS, 40c each

1-lb. Bees with Young Queen . \$1.00

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Send for them, they go.

GRAYDON BROS.

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The Leading Bee Journal of the Southern Hemisphere is the

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Subscription 5 shillings per year, start any time. Enquire for International money order for 5 shillings (Australian) at your Post Office. Write now to The Editor, P. O. Box 20, West Maitland, New South Wales, Australia.

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Used in every state of the Union
Telling you how good they are is no
proof—Ask your neighbor or the man
who owns them, SEE FOR YOURSELF.

2-lb. pkg. with queen . . . \$2.00
3-lb. pkg. with queen . . . 2.60
Queens, . . . 60c each; six and over, 50c each
SPOERRI APIARIES, ST. BERNARD P. O., LA.

Italian Bees & Queens

Vigorous honey making kind.
The best for less. Satisfaction
guaranteed. Why not try us.

2-lb. pkg. with queen ea. \$1.50
3-lb. pkg. with queen ea. 2.05
4-lb. pkg. with queen ea. 2.75
Queens each40

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HOMAN BROS., Shannon, Miss.

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The Southern beekeep-
ers, own magazine, but
read by studious honey
producers everywhere.



With the American Bee
Journal makes a com-
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BEEKEEPERS ITEM, San Antonio, Texas

Choice Bright Italian Queens

that are a pleasure to work with. This
Stock has been bred and selected in
the North for the last 37 years, for
good winterers, hustlers and gentleness.

Price: 65c each, and \$7.00 a dozen.

EMIL W. GUTEKUNST, Colden, N. Y.

**THREE-BANDED ITALIAN
BEES and QUEENS**

Buy our full weight packages of
young bees and queens, either on comb
of brood and honey or combless as you
like best.

2-lbs. bees and queen, combless \$1.45
3-lbs. bees and queen, combless 1.85
2-lbs. bees and queen with comb 1.65
3-lbs. bees and queen with comb 2.05
Queens35

Health certificate, satisfaction and
live delivery, guaranteed.

OSCAR ARNOUVILLE : HAMBURG, LA.

PIGEONS

If you are interested in Pigeons, you need
the AMERICAN PIGEON JOURNAL, an
informational instructive 52 page monthly
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PURE ITALIAN BEES

2-lbs. Bees Stand. Comb & young queen \$1.85
2-lbs. Bees & M. D. Comb & laying queen 2.25
2-lbs. Bees and young laying queen 1.70
Extra queen40
Extra lb. of bees50
Extra Comb50

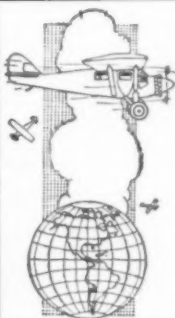
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P. O. Box 124 Kenner, Louisiana

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Wire your orders. Prompt service guaranteed.

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hours. We have a record for 47 years in business under the
Rusch name, which can only be accomplished through honest
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If you have not received our 1941 catalog, write for your copy
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STILL ON THE JOB**BERRY'S RELIABLE BEES and SERVICE**

THE BEST TO BE HAD

June Prices for Booster Packages

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1 to 11-----	\$1.55 ea.	\$2.05 ea.	\$2.55 ea.
11 and up-----	1.50 ea.	2.00 ea.	2.50 ea.

Queen Bees, 50c each.

Build up that weak winter worn colony with Our Young Bees. We guarantee that
90% of them are not over 15 days old. Their young lives await your service. A few
of these bees added to a weak colony works wonders. Try them and your experi-
ence will be most pleasing. Satisfaction we guarantee.

M. C. BERRY & CO.

Oldest Active Shippers of Packages

Box 684, Montgomery, Alabama

GENUINE ITALIAN BEES AND QUEENS**30c QUEENS 30c**

2-lb. pkg. with queen \$1.35 3-lb. pkg. with queen \$1.70
For Booster Packages deduct price of queen.

Satisfaction Guaranteed.

LUCEDALE APIARIES -:- LUCEDALE, MISSISSIPPI

CARNIOLAN QUEENS, 3 for \$1.00 Postpaid

Airmail, 5c per queen extra

EPHARDT'S HONEY FARMS :: TORRAS, LA.



FOR BETTER BEEKEEPING

DADANT'S FOUNDATION

FIRST CHOICE OF EXPERT BEEKEEPERS

THE POSTSCRIPT

A good suggestion comes from Leo. D. Haughey, of Wichita, Kansas. He proposes to urge those in charge of shelter belt planting to include trees which are useful to the bees. If the beekeepers would bring this to the attention of forestry officials in every state much valuable bee pasture would likely be the result.

With reference to the athel tree mentioned in recent issues on this page, R. M. Kellogg, of Glendale, California, writes that it would yield 100 pounds of honey per colony if it were worth the beekeeper's trouble to get it. He describes the honey as light yellow with a disagreeable flavor, and it granulates with a coarse grain.

A few skunks have lived around our apiary for thirty years and although I have always known that sometimes one made a meal on bees I have never seen evidence of serious damage until this spring. Because mice are so bad here we have encouraged the animals, but this time they about wrecked the apiary. Evidently several lived together in one den and when the bees began to fly this spring they settled down to easy living until many hives were entirely empty of live bees. Now we have one more argument for top entrances. It is doubtful whether the animals would have started troubling the hives had there been top entrances.

It is said that the people of Ixcatepec, in the state of Morelos, Mexico, specialize in honey production. It would be interesting to know more about them and the methods they follow. Official records of honey exports indicate that much honey is produced in Mexico. It might be very much to our advantage if we knew more about our neighbors to the south.

There is a saying "when we get what we want we don't want it." That appears to be true of some of the goldenrods in our test plots. With them I am like the darkey who returned to the preacher a few days after he was married and asked for a divorce. When reminded that he took Mandy for better or for worse, he replied, "Yes massa but she is worse than I took her for."

Some of the goldenrods spread so rapidly from the root that they become pestiferous weeds. The bushy goldenrod, which is regarded so highly for the bees in some localities, spreads in this manner so fast that it has no place in the garden. The beekeeper who has waste ground on which to establish it need not worry about its ability to take care of itself. Of the twenty-two species in our test garden, only a few appear to be troublesome and some are worthy a place in the ornamental garden.

The cleome seeds are slow in germination. For this reason they are much better planted in the fall. When planted in spring many of the seeds remain dormant over the entire summer and come up the following spring. We planted several new varieties last year which failed to grow, but this spring they came up among other plants which we had later placed in the same area.

From California comes reports of the heaviest rains in seventy years. One correspondent tells of conduits which have carried stream and storm water for forty years but which proved inadequate and overflows caused much damage. He rejoices in a full water supply which had been diminishing through some twenty years of deficient rainfall.

Here in the Midwest we have had more normal rainfall this spring than for several years, so we are hoping that the long drought is really ended.

Here in America we have always assumed that queen rearing by means of transferring larvae to artificial cell cups was developed in this country. From Brother

Frederick, of St. Mary's Mission, Techny, Illinois, I learn that we were not the first. He writes: "A certain Rev. Weygand practiced for years the transferring of larvae into queen cells, and showed this system at a beekeepers' convention in the city of Cologne, Germany, Sept. 7-9, 1880.*** But it was W. Wankler who made and invented fine wooden sticks for dipping artificial cells, who made wire queen cell protectors, queen cages for virgins, frames for artificial cells, etc."

It appears that this man Wankler was a watchmaker and that he made fine tools for transferring larvae and that he also made instruments for measuring tongue length of queens. It also appears that another German beekeeper bought these tools from Wankler and brought them with him when he came to this country. We learn further that Frank Benton became acquainted with Wankler when visiting in that country and that they became very good friends. Thus it appears that our system of queen rearing was built on suggestions received from abroad.

About 1925 J. W. Powell, of Mesilla Park, New Mexico, called our attention to a new plant which was very attractive to the bees. It was found to be the Syrian Bean Caper, (*Zygophyllum fabago*) which had not been previously known within the United States. Powell reported that he had never known it to fail to secrete nectar and that the bees roared over it from the time the first blossom opened until the last one faded. We extend our thanks to him for specimens of the plant sent to us recently for the American Bee Journal honey plant garden.

A very interesting letter concerning the Albizzia or silk-tree comes from T. B. Stockwell, of San Bernardino, who sent samples of the flower and leaf. He reports it as a fast growing tree which will grow two or three feet in one summer and must be cut back in the second or third year to prevent it becoming top heavy and breaking in strong wind. Beginning to bloom in the second or third year it attracts the bees for both pollen and nectar and flowers for about three months beginning in late winter. The tree will not stand cold, but thrives in mild climates. Readers living in the southern states who are interested may like to write to Mr. Stockwell at 3379 E Street, San Bernardino, California, for seeds, enclosing a self addressed stamped envelope.

The summer meeting of the Iowa Beekeepers Association for the western part of the state promises to be of more than usual interest this year. The date is July 9 and the place the Littlefield apiary in Exira. Littlefield has developed a rather unique system of management which has proved very successful. Visitors will enjoy seeing his outfit in operation.

The combination of deep frames, top entrances and food chambers is quite unlike anything which I have ever seen elsewhere. His power uncapper and other extracting machinery have many original features which will interest every commercial beekeeper. Iowa promises two very good meetings, the other at Davenport in June.

Many orchards in western Iowa were killed or severely injured by the Armistice Day storm last November. It takes many years for the fruit grower to recover from such a major disaster. When the beekeeper loses his bees, if he still has the equipment they can be replaced quickly, but the orchardist must wait for many years at best to replace his trees. In the test plots we had some losses, but they were not as serious as we had been led to expect after the many reports of injury which appeared in the papers.

FRANK C. PELLETT.